Conformance and Interoperability (C&I) Validation Workshop for EAC Region
Laico Regency Hotel, Nairobi, Kenya
21st – 23rd October 2015

Basic Steps to Establish ISO/IEC 17025 Compliant Testing Laboratories

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1

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PRESENTATION OVERVIEW

- Requirements
  - Testing scope
  - ISO/IEC 17025 requirements
- Components of a ISO/IEC 17025 compliant testing laboratory
- Criteria for selecting countries for establishing Regional Test Centres

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2

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Requirements

- Testing scope
  - ➤ Need to determine the testing scope, e.g. telecom equipment, IT equipment
  - ➤ It could be derived from the business plan

- ISO/IEC 17025 requirements include:
  - ➤ Management requirements
  - ➤ Technical requirements

3

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Components of a ISO/IEC 17025 compliant testing laboratory
❖Legal status/ Legal entity

- The laboratory has to be established as an entity that can be held legally responsible

4

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Components of a ISO/IEC 17025 compliant testing laboratory
❖Financial policy

- Secure medium and long term funding
- It is difficult in some countries to cover cost from earned income
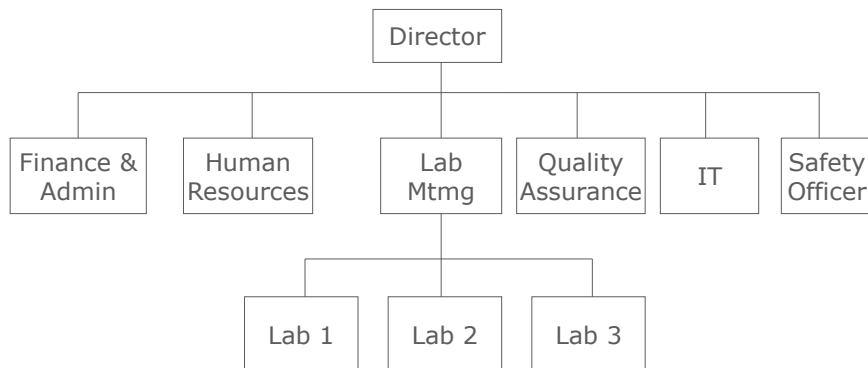- Government has to commit to provide long term financial support

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5

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Components of a ISO/IEC 17025 compliant testing laboratory
❖Management structure

```
                    Director
     ┌──────┬──────┬──────┬──────┬──────┐
  Finance &  Human   Lab   Quality   IT   Safety
   Admin   Resources  Mtmg  Assurance      Officer
                      │
                ┌─────┼─────┐
              Lab 1  Lab 2  Lab 3
```

A typical Management structure

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6

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Components of a ISO/IEC 17025 compliant testing laboratory
❖Personnel

- Recruit staff who have both theoretical training and adequate practical experience
- Deploy staff for an extended period of time in a working laboratory

7

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Components of a ISO/IEC 17025 compliant testing laboratory
❖ Premises

- Effective separation between neighbouring areas when the activities are incompatible e.g. wireline and wireless test stations
- Access to test and calibration areas limited to authorized personnel e.g. by ID cards

8

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Components of a ISO/IEC 17025 compliant testing laboratory

❖ Premises (cont'd)

- Separation of laboratory and office spaces
- Proper orientation of windows to avoid direct sunlight to protect sensitive test equipment
- Appropriate long term environmental control

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Components of a ISO/IEC 17025 compliant testing laboratory

❖ Environmental control

- For testing of telecom equipment, temperature between 15–30 degrees C
- Relative humidity < 70%
- Continuity of electricity supply

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Components of a ISO/IEC 17025 compliant testing laboratory

❖ Environmental control (cont'd)

- Uninterrupted Power Supply deployed if necessary
- Voltage stabilizer required if variance is > + or − 5%

11

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Components of a ISO/IEC 17025 compliant testing laboratory

❖Equipment

- Purchase equipment which confirm to specifications relevant to the tests
- Availability of maintenance and technical support is an important issue
- Better to buy a slightly a more expensive equipment for which maintenance is available than a less expensive option for which there is no technical support, in the country or in neighbouring countries

12

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Components of a ISO/IEC 17025 compliant testing laboratory
❖Equipment

- Selecting a vendor, criteria include:
  - ➢Vendor's equipment meets the required specifications
  - ➢Vendor has leading position in the market place
  - ➢Equipment design, development, and manufacturing take place in a quality system environment such as ISO 9001

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13

Components of a ISO/IEC 17025 compliant testing laboratory
❖Equipment

- Selecting a vendor, criteria include:
  - ➢Vendor provides installation, familiarization and training services
  - ➢Vendor provides phone and onsite support in local language

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14

Components of a ISO/IEC 17025 compliant testing laboratory
❖Equipment

- Installation and Documentation, steps include:

  ➢ Verify the location meets the environmental specifications as defined by the vendor
  ➢ Install equipment hardware according to vendor specification

15

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Components of a ISO/IEC 17025 compliant testing laboratory
❖Equipment

- Installation and Documentation, steps include:

  ➢ Install software and start-up according to vendor specifications
  ➢ Create documentation of hardware and software such as vendor, model number, serial number and location

16

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Components of a ISO/IEC 17025 compliant testing laboratory
❖Equipment

▪ Initial testing for calibration and performance verification, steps include:

- ➢Develop test procedures and test protocols
- ➢Define acceptance criteria based on documented specifications
- ➢Make sure test engineers have appropriate qualifications

17

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Components of a ISO/IEC 17025 compliant testing laboratory
❖Equipment

▪ Initial testing for calibration and performance verification, steps include:

- ➢Perform tests and document test results
- ➢Label equipment with status, dates of last and next calibration
- ➢Maintain records of calibration and checks

18

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Components of a ISO/IEC 17025 compliant testing laboratory

❖ Training system

- Develop training program to train new staff and to upgrade staff

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Components of a ISO/IEC 17025 compliant testing laboratory

❖ Steps towards ISO/IEC 17025 accreditation

- Selection of accreditation body, criteria include:
  - ➢ Language
  - ➢ Proximity to the country if in country accreditation body is not available
  - ➢ Accreditation cost
  - ➢ Accreditation body is a signatory to ILAC MRA

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Components of a ISO/IEC 17025 compliant testing laboratory

❖ Steps towards ISO/IEC 17025 accreditation

- Investigation

  ➢ Create team with a team leader
  ➢ Define scope of accreditation
  ➢ Learn ISO/IEC 17025 requirements

21

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Components of a ISO/IEC 17025 compliant testing laboratory

❖ Steps towards ISO/IEC 17025 accreditation

- Investigation (cont'd)

  ➢ Conduct gap analysis and prepare task list
  ➢ Estimate costs
  ➢ Management decision

22

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Components of a ISO/IEC 17025 compliant testing laboratory

❖ Steps towards ISO/IEC 17025 accreditation

- Implementation

  - Create implementation team
  - Select accreditation body
  - Develop document
  - Training

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Components of a ISO/IEC 17025 compliant testing laboratory

❖ Steps towards ISO/IEC 17025 accreditation

- Implementation (cont'd)

  - Internal audit and corrections
  - Pre-assessment and corrections
  - Accreditation audit

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Components of a ISO/IEC 17025 compliant testing laboratory

❖ Steps towards ISO/IEC 17025 accreditation

- Accreditation support

  ➢ Ensure that there is long term financial and managerial support to maintain accreditation

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Criteria for selecting countries for establishing Regional Test Centres

- Countries belonging to a geographic region
- Countries sharing technical and/or economic interests
- Countries which have established Accreditation Bodies which are signatories to ILAC MRA

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Criteria for selecting countries for establishing Regional Test Centres (cont'd)

- Countries which have metrology institutes to provide calibration services
- Synergism between the stakeholders - equipment vendors/standards development organizations/network operators/test centres
- Funding support from both public and private sectors

27

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Basic Steps to Establish ISO/IEC 17025 Compliant Testing Laboratories

Thank you

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28

28

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