

**ITU Forum on Conformance and Interoperability  
Testing in CIS and Europe Regions  
(Moscow, Russia, 9-11 November 2011 )**

**Basic Steps to Establish ISO/IEC  
17025 Compliant Testing Laboratories**

**Presented by  
Andrew Kwan  
ITU Consultant**



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**PRESENTATION OVERVIEW**

- Requirements
  - Testing scope
  - ISO/IEC 17025 requirements
  
- Components of a ISO/IEC 17025 compliant testing laboratory



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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



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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



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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

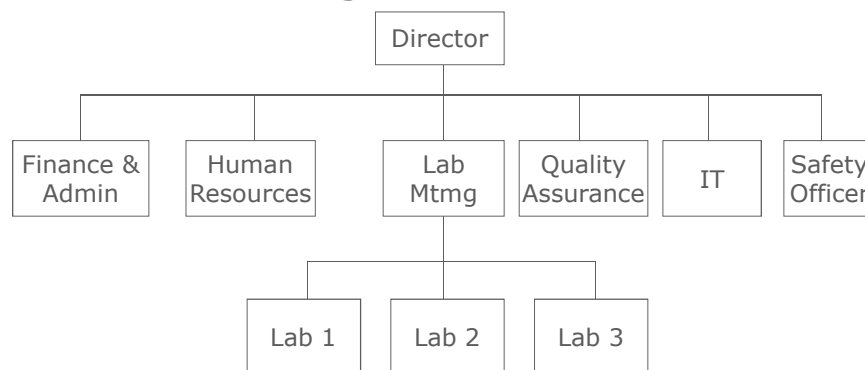


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## Components of a ISO/IEC 17025 compliant testing laboratory

### ❖ Management structure



A typical Management structure



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## Components of a ISO/IEC 17025 compliant testing laboratory

### ❖ Management structure

- Departments with conflicting interests do not adversely influence compliance with ISO/IEC 17025
- In example shown, Finance, Administration, Quality assurance and Human resources do not report to Lab. Management.
- If laboratory is part of a larger organization, responsibilities of key personnel have to be well defined in order to identify potential conflict of interest



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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



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## Components of a ISO/IEC 17025 compliant testing laboratory

### ❖ Personnel (cont'd)

- Remuneration of staff is an important issue
- If possible ensure fully trained staff are paid well enough to keep them in the organization



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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



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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  $- 5\%$



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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



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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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## 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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## 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



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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



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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



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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



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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



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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



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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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## Basic Steps to Establish ISO/IEC 17025 Compliant Testing Laboratories

Thank you

Andrew Kwan  
kwanz@telus.net



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