ITU Training Course on Conformity and Interoperability for AFR Region

Tunis, Tunisia, 14–18 December 2015

Outcomes and Recommendations

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Conformity Assessment Procedures

Procedures for establishing a conformance assessment regime may include the following procedures:

A. **Query for new products to be homologated**
B. **Import procedures for testing proposals**
C. **Reference Standards for conformity assessment**
D. **Test, Recognized Laboratories, Test Reports**
E. **Issuing and/or validating a Certificate of Conformity**
F. **Issue of the Homologation (or acceptance)/Fees**
G. **Suspension and Withdrawal of the Homologation Certificate**
H. **Monitoring, Enforcement, and Sanctions and Post-Market Surveillance**

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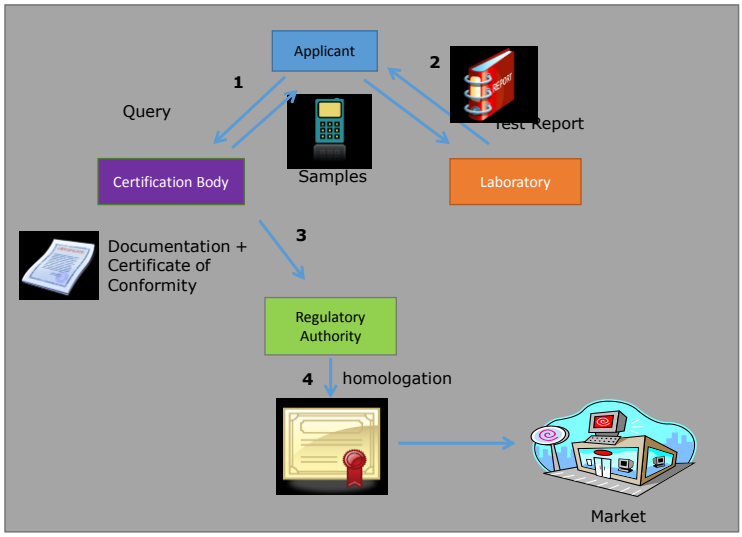
Regulatory Aspects Conformance assessment procedures

Example of interactions that may exist among the entities participating in a conformity assessment process that uses certification mechanism:



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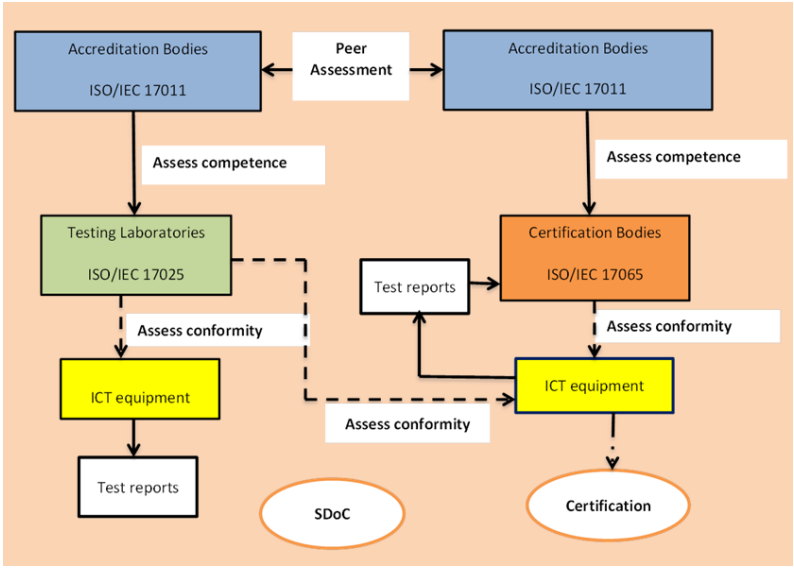
Conformity Assessment Regimes



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Conformance Assessment Procedures

- **Fees**
  - **Assessment and reassessment fee**
  - **Technical expertise fee**
  - **Listing fees**
  - **Registration fees**
  - **Payment of fees**

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Definition and publication of ICT reference standards for conformity assessment of ICT equipment

- A number of regional standards bodies serving specific regional policies, regulations and requirements are heavily engaged in development and promulgation of the product standards and include the European Telecommunications Standards Institute, USA Telecommunications Industry Association, and various important forums and consortia such as 3GPP

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Definition and publication of ICT reference standards for conformity assessment of ICT equipment

The next table gives an example of international standards, regional standards and forum and consortia standards that may be used by some countries

Category	Product	Standard	Technical Requirement
User equipment	Mobile	3GPP	Power; frequency stability, frequency in-band emission.
	Fiix Telephone	CEI	Power; frequency stability, frequency in-band emission.
	PABX	• Rec. UIT-T G.711. • Rec. UIT-T Q.921.	Protocols
	Charge and power adapter	Rec. UIT-T L.1000	Power, energy efficiency, eco-environment specifications
	Personal area communication	Allocation of national frequencies	Gain, transmission power, bandwidth, frequency stability.
	Residential optical unit	UIT-T G.984	Power; frequency stability, frequency in-band emission, SAR limits.
	UTP cable	ISO/CEI 11801	Return Loss, FEXT, NEXT, bandwidth
RTTE	Mobile - Broadband base station	ETSI	Gain, transmission power, bandwidth.
	AnteNna	ETSI	Radiation Diagram, Gain, VSWR.
	Broadcast transmitter	ETSI	Gain, transmission power, frequency width.
	Earth station equipment / VSAT	ETSI	Gain, transmission power, bandwidth
Network equipment	Transmission equipment	Rec. UIT-T G.707	Protocols
	Network switches and routers.	MPLS - G.8121 Ethernet - G.8021 TVIP - H.62X	Protocols
	Cables	ISO/CEI 11801	Return Loss, FEXT, NEXT, bandwidth
	IPVT	Rec. UIT-T	See Standard
Electromagnetic Compatibility	All equipment	Rec. UIT-T K.48	Radiated spurious emission, conducted spurious emission, resistibility
Safety	All equipment	Rec. UIT-T K.21	Electrical chock protection, fire protection, overcurrent protection

Proposal for building in country labs

Scope

To **identify priorities in conformance testing lab implementation** in EAC African countries

Preamble:

It is urgent to **establish the MRA** between different African countries as Africa is the only region without any accreditation scheme similar to ILAC. However implementing an MRA **will take time** due to political and procedural reasons.

Possible approach

A possible approach could be **to start, in parallel to the MRA implementation**, the **development of Mini Labs (focusing on verification of incoming quality of mobile terminals)** in different African countries in order to **promote the KH development** in such regions as far as concern use of instrumentation, lab management, quality and instrumentation purchasing process (quality and instrumentation maintenance). Proceeding in such a way **the countries developing labs could become the reference** for each specific testing area in the African area

In parallel the MRA will be established and **auditing and verification procedures** could be established to monitor the labs implemented in the meantime. Same subtest list for conformance testing (acceptance) and market survilliance

Large test center cost (ITU feasibility study)

lab	activity	m²	Location Rent K€/year	Utility K€/year	Instrument. Asset K€	Personne Number of people #	Instrument. Opex K€/year
SAR	Specific Absorption Rate lab	150	19	28	800	4	25
USX	User experience lab	130	17	24	100	6	0
BBA	Broadband access lab	300	39	56	1.400	7	5
VAS	Mobile value added services lab	40	5	7	0	3	0
EPS	Electrical safety & protection lab	80	10	15	1.200	4	25
ELA	Electroacoustic lab	250	32	46	800	4	5
EMC	Electromagnetic compatibility lab	300	39	56	1.600	5	5
RSL	Radio & Signalling lab	250	32	46	2.000	12	10
PWR	Powering consumption lab	80	10	15	200	2	5
QML	Quality of material lab	250	32	46	1.300	6	15
WIF	Personal area network lab	170	22	31	500	5	5
TPF	Fixed Test plant	900	117	167	3.000	33	120
TPM	Mobile Test plant	2500	324	463	3.000	55	300
management						10	
cross activities (*)						24	
TOTAL		5.400	700	1.000	15.900	180	520

lab	activity	m²	Location Rent K€/year	Utility K€/year	Instrument. Asset K€	Personne Number of people #	Instrument. Opex K€/year
DTT	**Digital terrestrial (DVB -T2)**	**40**	**50**	**50**	**150**	**2**	**20**

Example of Mini Lab cost (for *mobile terminals testing* only)

lab	activity	m²	Location Rent K€/year	Utility K€/year	Instrument. Asset K€	Personne Number of people #	Instrument. Opex K€/year
EPS	Electrical safety & protection lab	80	10	15	12	3	2
RSL	Radio lab	100	32	46	150	3	6
ANC	Radio lab anechoic chamber				200		
SIL	Signalling radio lab	60	8	12	800	4	4
BCL	Battery charge	80	10	16	230	2	8
SAR	Specific Absorption Rate lab	150	19	28	423	3	4
management						2	
cross activities (*)						1	
TOTAL		470	79	117	1815	18	24

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Example: SAR lab cost evaluation

Instrumentation/device	Purpose	Estimate cost (kEuros)
SAR measurement system	Overall measurement system, including probes and phantoms	200.0
Dielectric probe kit	SW and probe used to measure Tissue Simulating Liquids properties	15.0
Network analyser	Instrumentation used to measure Tissue Simulating Liquids properties	25.0
Radio communication tester	Instrumentation needed to set up EUT communication (e.g. 2G, 3G, LTE systems)	80.0
System check components	Instrumentation needed to perform SAR system verification	60.0
Personal computer and printer	Measurement SW is installed on it	3.0
Absorbers	To avoid reflections in close proximity of the measurement area	20.0
Liquid management	Material, instrumentation needed to prepare liquids and storage chemicals	20.0
	TOTAL	423.0

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Guidelines Highlights:

Implementation of an MRA

- **Conformity Assessment**
- **Pre-implementation preparation**
- **Confidence building and start-up**
- **Identification of scope – technical requirements and phases**
- **Identification of contacts**
- **Information exchange**
- **Nomination of designating authorities**
- **Identification of MRA host and repository of signatories**
- **Nomination of regulatory authorities**
- **Identification of accreditation bodies**
- **Notification of conformity assessment bodies**
- **Recognition of conformity assessment bodies**
- **Formation of a joint committee**
- **Monitor and surveillance programmes**
- **Experience from implementation of existing MRAs**

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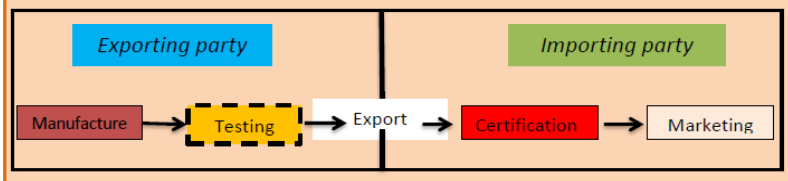
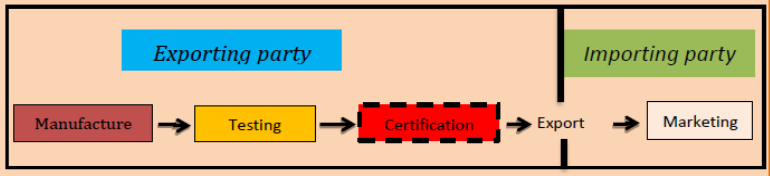
Implementation of an MRA

Figure 4: Phase 1 – Mutual acceptance of test reports



Source: Andrew Kwan

Figure 5: Phase 2 – Mutual acceptance of certification



Source: Andrew Kwan

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Parties can choose to implement the phases of the MRA one at a time or both together. Typically the parties will implement Phase 1 and after gaining experience and confidence with the Phase 1 procedure, they will then proceed to implement the Phase 2 procedure.