



ITU Regional Seminar for the Africa Region on Conformance and Interoperability Testing

(Accra, Ghana, 4 – 6 July 2011)

Towards a Harmonized Approach to Type Approval Certification: Case Study of Nigeria

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Accra, Ghana, 4 – 6 July 2011

Outline

- Introduction.
 - ◆ Conformance to Standards and Interoperability with other systems
 - ◆ Diverse Technologies and Technology Uptake,
- Legal Framework for Type-Approval;
 - ◆ Nigerian Communications Act, 2003 (NCA 2003).
 - ◆ Type Approval Guidelines, 2007
 - ◆ Type Approval Regulations, 2008
- Nigeria's Type Approval Processes
- Monitoring, Enforcement, and Sanctions
- Conclusions

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Introduction1- Standards

- Applicable Standard Is a format that has been approved by a recognized standards organization body or institution, accepted as a norm for use by the industry.

- There are standards for equipment, devices, systems, circuits, networks, programming languages, operating systems, data formats, electrical interfaces etc.

Introduction2 - Conformance and Interoperability Expectations

- Conformance:
 - ◆ Conformance to Specifications
 - ◆ Compliance to Standards – Easy of Integration
 - ◆ Meeting safety and reliability requirements in networks or Standalone
- Interoperability and Compatibility
 - ◆ Integration and Interfacing with other network devices (and all such devices implement specs, correctly)
 - ◆ Support of specified communications protocols – systems speak same language
 - ◆ Reduction of probability of errors
 - ◆ Interference with other systems thereby affecting QoS

A TASTE OF VARIOUS TECHNOLOGIES



Source: GSA - Global mobile Suppliers Association: September, 2009

OTHER MOBILE TECHNOLOGIES

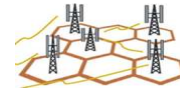
AT&T



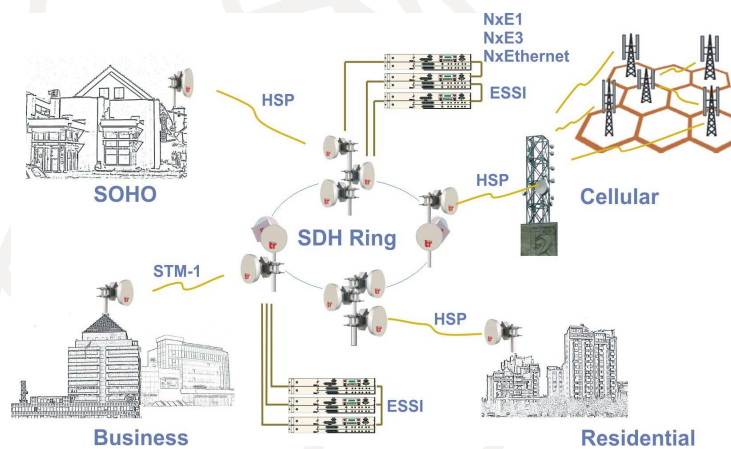


Mobile Telecommunications Standards

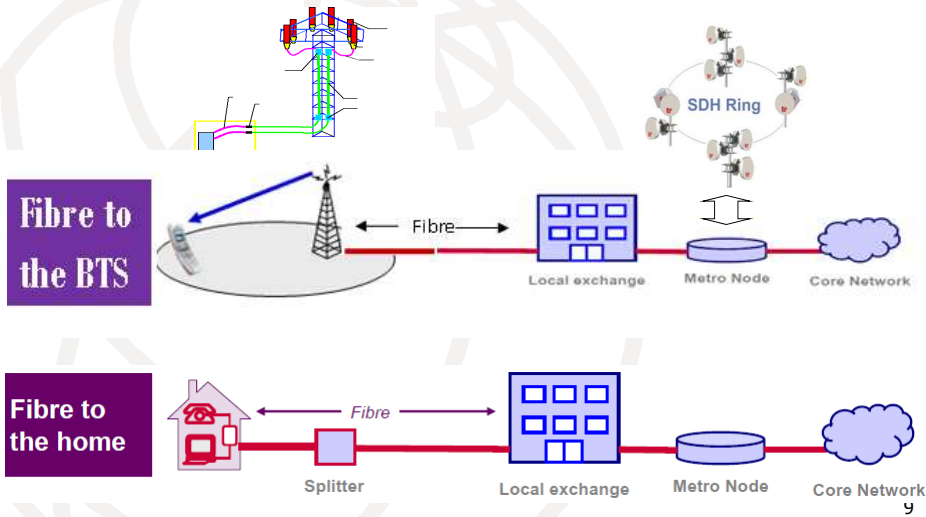
1G	NMT · AMPS · Hicap · Mobitex · DataTAC · TACS · ETACS
2G	GSM/3GPP family GSM · GPRS · EDGE/EGPRS
	3GPP2 family CDMAOne (IS-95)
	Other IS-AMPS (IS-54 and IS-136) · CDPD · iDEN · PDC · PHS
2.5G	GSM/3GPP family GPRS · HSCSD
	iDEN family WIDEN
2.75G	GSM/3GPP family EDGE/EGPRS
	3GPP2 family CDMA2000 1xEV-DO (IS-2000)
3G (IMT-2000)	3GPP family UMTS (UTRAN) · WCDMA-FDD · WCDMA-TDD · UTRA-TDD LCR (TD-SCDMA)
	3GPP2 family CDMA2000 1xEV-DO (IS-856)
3.5G	3GPP family HSDPA · HSUPA
	3GPP2 family EV-DO Rev. A
3.75G	3GPP family HSPA+
	3GPP2 family CDMA2000 3x (EV-DO Rev. B)
3.9G (Pre-4G)	3GPP family LTE (E-UTRA)
	Other Mobile WIMAX (IEEE 802.16e-2005) · Flash-OFDM · IEEE 802.20
4G (IMT-Advanced)	3GPP family LTE Advanced
	WIMAX family IEEE 802.16m



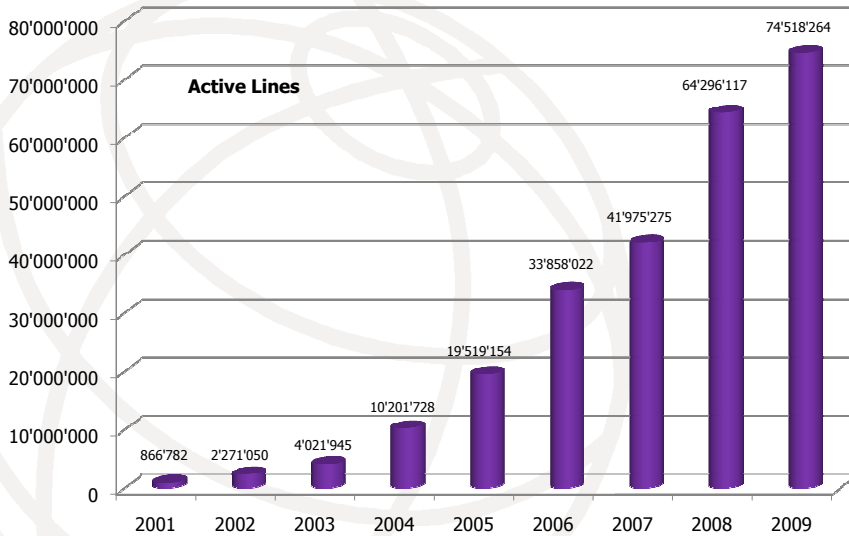
TECHNOLOGIES FOR SHORT-HAUL MICROWAVE-TERRESTRIAL



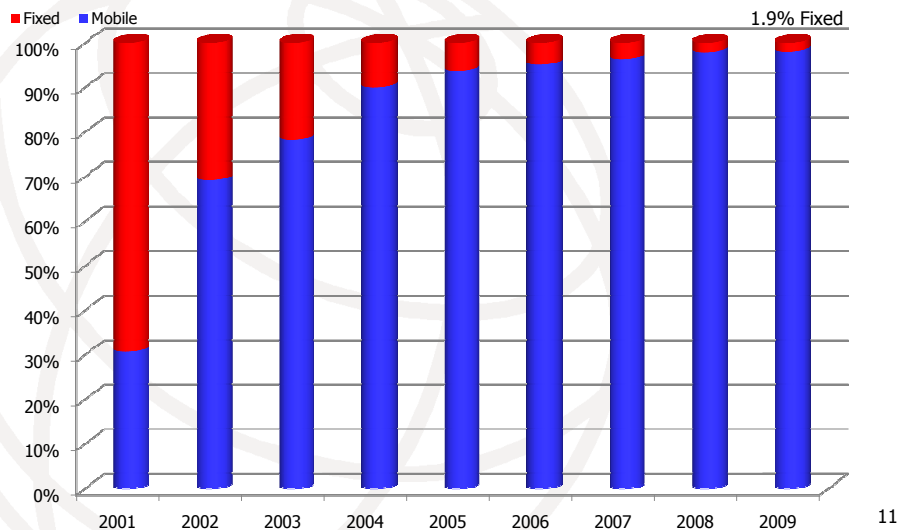
TECHNOLOGIES AND NETWORKS



SERVICE UPTAKE - GROWTH RATE OF SUBSCRIBER LINES -NIGERIA



PROPORTION OF FIXED TO MOBILE NIGERIA



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Legal Framework -The NCA, 2003

- The Commission shall, at the instance of licensed service providers, equipment manufacturers or suppliers, conduct Type approval tests and issue certificates therefor in respect of communications equipment and facilities to be used in Nigeria
- Licensed service or facilities providers, equipment manufacturers or suppliers shall obtain type approval certificates from the Commission in respect of their communications equipment or facilities prior to installation or sale in Nigeria

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The Type Approval Guidelines, 2007

The Document is intended to identify the procedures to be followed before communications equipment is used or sold in Nigeria. It provides details on:

- Application Guidelines
- Explains how to apply for Type-Approval
- Applicable Fees
- Test Results
- Type Approval for Changes to Equipment
- Declaration of Conformity
- Supporting Documentation required
- Labeling requirements.
- List of Standards some been used for DoC

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The Type Approval Regulation, 2008

- Describe rules and processes for the exercise of functions of the Commission w.r.t Type Approval
- Identify applicable technical standards in addition to the details provided by the Guidelines
- Provide Schedule of Fees
- Provides for Publication and update of list of Approved equipment (Dbase)
- Discusses Contraventions and Enforcement Processes including that of Revocation of certificates
- Provide procedures for Revocation –Notices etc

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Step1:-Administrative Type-Approval Processes



- Verification of the Completeness of the submitted filled NCC type approval form
- Verification of the Evidence of application form fee payment (N1,000.00)
- Verification of the completeness of the submitted documentation
- Verification of firm incorporation details
- Verification of tax indebtedness (if any)

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Step2:- Technical Examinations -Checks1



- **PHYSICAL INSPECTION AND TEST** -Label and Marking can reveal sub standards / fake equipment
- **Operational Frequency:** Only equipment operating within the approved spectrum is allowed to be imported into and deployed in the country.
 - **Spectrum Mask** must be passed/met by all transmitting equipment: this reveals the level of out-of-bound emissions and possibility of interference.

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Technical Examinations -Checks2

- **Type and nature of interface and protocols** to ensure seamless and interoperability.
- **Redundancy features** – (1+0, 1+1), hot swappable to ensure that down time is kept as low as possible.
- **Availability of Test Reports:** Ensures that Electromagnetic Compatibility, Radio, Electrical Safety, Health etc standards were carried out on such equipment and test certificates are included.
- **Power Limit:** To ensure that equipment operates within the acceptable power level
- **Supply Voltage, Current, Frequency and Power ratings:** Ensures compliance to applicable electrical standards in Nigeria

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Technical Examinations -Checks3

- **SIM / RUIM Swap:** A cell phone must work with different networks as long as the networks are offering the same technology.
- **Battery Life - Talk Time:** Average talk time can be fixed at 4hours and **Standby time** fixed at 6 days) i.e. any period regarded as reasonable
- **DoC with Acceptable International Standards:** Ensures Standards Such as IEC, ETSI, CENELEC, EN and ITU Recommendations (MARK??) etc. are adhered to

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Technical Examinations- Cheks4

- **Functionality and Safety** of devices must be guaranteed.
- **ENVIRONMENTAL PARAMETERS - Humidity, Temperature and Pressure:** The operational range may be observed to suite Nigeria ambient environment
- **SPECIFIC TEST FOR SPECIFIC EQUIPMENT eg. SAR Test** must be passed by all Handsets, Smartphones etc

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Other Processing Steps

- Step3: Tests (If deemed appropriate)
 - ◆ At NCC
 - ◆ At Special Labs
 - ◆ Manufacturer Premises
 - ◆ Acceptance of test certificates from recognized Labs
- Step4: Various Administrative Approvals
- Step5: Payment –After Approvals are Granted
- Step6: Printing/Issuance of Certificates

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Monitoring and Enforcement

- Random Site Visits, or via Complaints (Direct or via Consumer Parliaments)
- Directive to Stop ordering and Sales
- Seizures
- Withdrawal of other Approvals
- Business Closures (Lock-up Premises)
- Fines, Forfeitures
- Prosecutions

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Main Interference Sources that need Monitoring

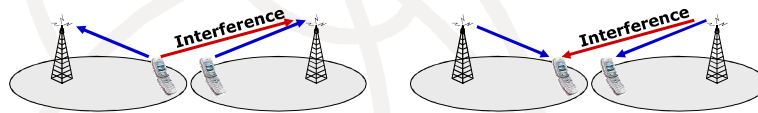
- Incidental Radiators
 - Antennas, Amplifiers, Battery chargers etc
- Unintentional Radiators
 - Computers, Peripherals and Digital systems,
- Intentional Radiators
 - Baby Monitors, Garage door Controls

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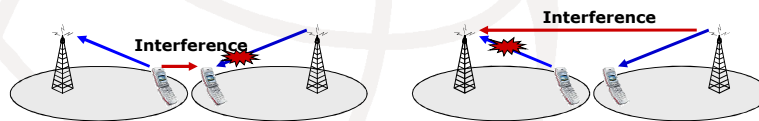
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INTERFERENCE POSSIBILITIES

FDD: Only terminal-to-base-station and base-station-to-terminal interference



TDD: Also terminal-to-terminal and base-station-to-base-station interference



Sanctions : Section 133 of NCA 2003



- A person who sales or installs any communications equipment or facilities without first obtaining the Commission's type approval test certificate therefor commits an offence and on conviction, is liable to a fine not exceeding N100,000.00 or to imprisonment for a term not exceeding 1 year or to both such fine and imprisonment
- Notwithstanding the provisions of subsection (4) of this section, a licensee who installs or sales any communications equipment or facilities without first obtaining the Commission's type approval test certificate therefor is liable to pay fine to the Commission in such amount as the Commission may determine

Conclusions



- Have discussed
 - ◆ Conformance to Standards and Interoperability
 - ◆ Diverse Technologies, Technology Standards, and Rapid Technology Uptake in Nigeria
 - ◆
- What the Law says:
 - ◆ Nigerian Communications Act, 2003 (NCA 2003).
 - ◆ Type Approval Guidelines, 2007
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THE END

I Thank You all

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