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## Regulations

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# Cellular Systems Coverage Measurements

Version 1.0

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## Article (1)

### Definitions

- 1.1 In applying these Regulations, the following terms shall have the following meanings unless the context requires otherwise, whereas any term undefined in the following shall be defined in line with the Federal Law by Decree No. 3 of 2003 as amended its Executive Order and Radiocommunications Policy:
- 1.1.1 “**Assigned Frequency**” means the centre of the frequency band assigned to a station by the Authority.
- 1.1.2 “**Assigned Frequency Band**” means the frequency band within which the emission of a station is authorized by the Authority.
- 1.1.3 “**Authorization**” means a Radio Frequency Authorization awarded by the Authority.
- 1.1.4 “**Coverage Cluster**” The Clusters defined in the Spectrum Price Policy item 10 (ii).
- 1.1.5 “**Harmful Interference**” means Interference which impairs the functioning of a radio communication service or which materially degrades or obstructs or repeatedly interrupts Radiocommunication.
- 1.1.6 “**Radio Frequency Authorization**” means a Radio Spectrum Authorization whether Individual or Class issued by the Authority, which permits the use of Radio Frequency subject to terms and conditions set out therein.

## Article (2)

### Network Parameters

- 2.1 The Licensee of Public Telecommunications Network offering cellular mobile telephony and data services shall provide to the Authority the following information upon request:
- 2.1.1 Detailed plan of the network, including site locations in national grid, antennas, base stations, radio network/base station-controller, outdoor repeaters, switches, Visitor Location Registers (VLRs), Home Location Registers (HLRs) and detailed frequency plan for each of the frequency bands used (e.g. 900/1800MHz, 2.1 GHz, 2.6 GHz).
- 2.1.2 The Authority has the right to visit any site (part of Cellular Network) of a Licensee. The Authority will announce these visits to the specific Licensee at least four days ahead.

- 2.1.3 The Authority will release initial demographic data in a GIS format or as a map indicating the clusters when available. The Authority will release updated demographic data when available. These data are released only if major changes exist. As long as no new data are released, the previous data will be applied.

### **Article (3)**

#### **Technical Conditions**

- 3.1. The maximum permissible EIRP shall be in accordance with the technical specifications issued by the Authority.
- 3.2. The frequencies at the band edges shall be used in coordination with the Licensee having adjacent allocation.
- 3.3. The spill over to neighbouring States shall be limited in accordance with the Authority Directives and Agreements reached between the UAE the Authority and the Administration of the neighbouring State.
- 3.4. The Licensee shall take immediate steps to reduce any Harmful Interference or spill over to the neighbouring States upon such request by the Authority.

### **Article (4)**

#### **Coverage Measurement**

- 4.1. The Licensee shall provide to the Authority at any time the existing coverage of the cellular networks for the UAE or any particular portion of the UAE as requested by the Authority.
- 4.2. The coverage shall be in both geographical and population percentage figures.
- 4.3. The coverage measurement shall be taken by using dual mode & tri-band (WCDMA & GSM900/1800) scanners duly calibrated to simulate the handset performance in outdoor and indoor conditions. 0 dB antenna gain shall be used with an omni-directional antenna. Feeder losses shall be compensated during the measurements using a spectrum analyser.
- 4.4. For signal/field strength measurements a WCDMA scanner is to be used. For UMTS, RSCP & Ec/Io for the Primary Common Pilot Channel (P-CPICH) shall be measured. For GSM, Rxlev & RxQual shall be measured. Ec/Io must be at least -17.41dB.

4.5. For outdoor measurements (GSM, UMTS) the following RSCP values shall be referenced:

Dense urban	-80 dBm
Village:	-90 dBm
Open country	-100 dBm

4.6. For indoor measurements the following maximum losses are acceptable:

Dense urban	-25 dBm
Village:	-15 dBm
Open country	-10 dBm

4.7. For indoor measurements, the losses do not apply to elevators and cellars. For buildings with special purposes, losses may be exceeded. The Licensee shall provide these conditions with results.

4.8. Coverage & Voice Call Setups shall be measured simultaneously. That is, when measuring downlink coverage using a scanner; voice call setups using standard phone must also be made to verify that there is service coverage (i.e. Uplink & downlink) and sufficient air interface capacity. Coverage is only accepted if the downlink meets the level and quality threshold and the user is able to initiate and hold voice calls of at least two minutes duration.

4.9. For voice and data calls performance measurement, Licensee shall provide details on the measuring points and these shall be replaced with new measuring points for the next round of measurements. The test calls shall be made to answering machine with a time stamp. The call drop rate shall be measured during the busy hour.

4.10. The Licensee shall provide other KPIs maintained by the Licensee for the network performance monitoring upon TRA request.