



INDIAN STUDY RESULTS **on** EMF compliance Networks and Devices

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Growing Tele-Density

Exponential increase in a number of Cellular Towers in India with more & more subscriber addition each year.

Telecom subscribers in India:	892 Million (Wireless segment is the Growth Key Driver with 861.7 Million subscribers)
Tele-density: Feb 2013 data	75.5% (Wireless 73%, wired line 2.5%)



Wireless Telephone Network

- **7,36,000 mobile towers in the country with about 10 Service Providers in each of 22 Licensing Service Areas .**
- **Growing public concerns on possible health hazards and impact on biota & environment due to EMF radiation from Mobile Towers /Handsets.**



EMF Radiation Norms

- **Indian EMF Policy already presented in the previous session**
- **Implementation from 01.09.2012**
- **More Steps under implementation**
- **Some of Indian Inputs on Towers and Minutes of Usage**
- **Need for EMF Radiation and Health Related Studies**
- **Need for review of existing standards**
- **Need for WHO Guidelines on Non-Ionizing Radiation**



Telecom Towers

➤ Wall Mounted/Pole mounted Antenna posed compliance problems

- Pole mounted Antenna height ≥ 5 metre above ground/ road level on flyovers.
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- No Residential place /office directly in front of the Wall mounted antenna at a height comparable to the antenna in the exclusion zone.



Report of International Bodies on Radiation

- **WHO in its Fact Sheet No. 193 of June 2011, has stated** “There are some indications of an increased risk of glioma for those who reported the highest 10% of cumulative hours of cell phone use, although there was no consistent trend of increasing risk with greater duration of use.”



Mobile Antenna Installation Scenario (India)

MMRDA
MMRDC
JOGESHWARI-VIKHROLI/INKROAD
CONSULTANTS - M. S. STUP CONSULTANTS P LTD
CONTRACTOR - M. S. NCC LTD - MAYTAS -
MAHAVIR (JV)
MAHAVIR ROADS & INFRASTRUCTURE PVT. LTD.







DIRECT NEW INPUTs from WHO, IARC (WHO) & ITU

- An Indian Delegation from DoT went on an official tour to Geneva from 19 to 22 Feb. 2013 to discuss **EMF Radiation related health issues with WHO Secretariat and Technical standards with ITU**



DIRECT NEW INPUTs from WHO, IARC (WHO) & ITU

- IARC Monographs 102 released in April 2013 on Page 421 indicates “Radiofrequency Electromagnetic Fields are Possibly CARCINOGENIC to humans (Group 2B)”
- Interphone, Swedish and Japanese Case Study inputs suggest limited evidence for Glioma and Acoustic Neuroma



DIRECT NEW INPUTs from WHO, IARC (WHO) & ITU

- **WHO was of the view that lowering of the EMF radiation limit may not be adequate to achieve the desired results though a strong regulation on siting of BTS Tower antennae is more important. Few countries have imposed restrictions specifying the horizontal distance in regards to the installation of base station Antenna from sensitive locations in the urban planning itself.**



DIRECT NEW INPUTs from WHO, IARC (WHO) & ITU

- Slides depicting the BTS Antennas at some locations in Mumbai will appear to be quite alarming with antennas being in very close proximity / directly facing residential locations (5 to 20 Met).
- More than 91 BTSs found Radiating at unacceptable levels after 1st September 2012 (New Standards)
- Need for development and issuance of Guidelines on non-ionizing radiation. New Tower Guidelines from 1st June 2013.



DIRECT NEW INPUTs from WHO, IARC (WHO) & ITU

- **Indian scenario with more than 10 licensees in each service area along with high population density is quite different from Europe**
- **Scientific assessment of health hazards is carried out by IARC, Lyon, France as their team carries out Research on Cancer and EMF Radiation : IARC visit on 21st Feb. 2013 by Indian team**



DIRECT NEW INPUTs from WHO, IARC (WHO) & ITU

- IARC indicated that in Europe Mobile Towers are not considered as a threat as Antennas are at higher levels /heights and fairly distant apart.
- However, Indian scenario appeared to be totally different for IARC and it was felt that their present research only on Mobile Hand Sets, may need to be reassessed.



DIRECT NEW INPUTs from WHO, IARC (WHO) & ITU

- A research project focussing on measurements of exposure levels from base stations in densely populated areas and areas covered by many base stations, level of usage, and measurements of emissions from regular and counterfeit mobile phones, was considered to be of great scientific interest.



DIRECT NEW INPUTs from WHO, IARC (WHO) & ITU

- On 21st & 22nd May 2013 a Workshop on **ITU-T EMF Estimator is being organised in Delhi. The Workshop shall facilitate Indian Service Providers for better** evaluation on the human exposure to electromagnetic field from multiple sources of communication installation, and take steps to reduce the radiation levels in the areas around transmitting stations.
- **New Inputs from Indian Operators obtained in March/ April 2013 on Hand Set Usage based on above IARC suggestion.**



MINUTES OF USAGE PER DAY IN Hours for One Operator

Licensing Area	Top 100 Subs	Top 500 Subs	Top 1000 Subs	Top 5000 Subs	Top 10000 Subs	Top 50000 Subs	Top 100,000 Subs	Entire NW
A	9.9	7.1	6.2	4.3	3.7	2.4	1.9	0.19
B	11.7	9.2	8.2	6.2	5.4	3.7	2.9	0.21
C	13.9	10.9	9.4	6.3	5.3	3.3	2.6	0.21
D	11.8	8.8	7.6	5.2	4.4	2.8	2.3	0.19
E	12.2	9.7	8.7	6.7	5.9	4.2	3.5	0.28
F	12.2	9.5	8.5	6.4	5.6	3.9	3.2	0.28
Total	11.9	9.2	8.1	5.9	5.0	3.4	2.7	0.23



MINUTES OF USAGE STUDY

- **Minutes of Usage/ Hours of Mobile Hand Usage by Indian Service Providers has been collected from Indian Mobile Operators across various Licensing Service Areas.**
- **There are 22 Licensing Service Areas and on an average 10 Mobile Operators in each Licensing Area**
- **Typical Results in last slide show that on an average more than 100,000 Mobile users of one operator in one licensed service have above 2.5 Hours usage per day.**



MINUTES OF USAGE STUDY

- **India inviting Requests for R&D Scientific Proposals and Case Studies on Mobile Tower and Mobile Hand Set related issues**
- **ITU need to have a relook at all Health initiatives through Study Groups**
- **Possibly a new ITU Focus Group on 'EMF Radiation & Health Issues' cutting across ITU-T, ITU-R and ITU-D**
- **IARC and WHO should go further from IARC Monographs 102 findings with focus on higher level of Mobile Hand set usage in developing countries as compared to much lower levels in Europe.**
- **Higher Mobile Tariffs than fixed in Europe and comparable Teledensity of 100+ for both Mobile & Fixed Lines in Europe**
- **Comparable Mobile & Fixed tariffs and manifold higher Mobile teledensity in developing countries**
- **Much Higher Levels of Mobile Minutes of Usage in Developing countries needs a more focussed attention of ITU/ WHO/ IARC(WHO)**



Thank You