

# Palestinian Authority

## Report on EMF Activities

### 10<sup>th</sup> International Advisory Committee on EMF

June 2005

#### Research Activities:

Research activities related to EMF have been conducted by the **Radiation Research Unit (RRU)** at Al-Quds University, since the year 2003. These activities are focused on the assessment of the levels of electromagnetic fields emitted from the mobile telephone base station towers. The assessments are based on theoretical calculations using commercially available software (RF-Map from Telstra Research Laboratories). Thirty one base stations were studied over the West Bank and Gaza Strip. About 50 EMF levels estimations were calculated at different locations around the investigated base stations including schools and kindergartens. Results are compared with the general public exposure limit of  $200 \mu\text{Wcm}^{-2}$  recommended by ICNIRP. The maximum electromagnetic emission from a single site was  $0.413 \mu\text{Wcm}^{-2}$ . Average maximum level estimated from all single sites was  $0.158 \mu\text{Wcm}^{-2}$ . The software enables also the calculation of cumulative EME levels resulted from multi site configurations.

Street mapping and indoor measurements of RF field strength for bandwidth from 0.5 MHz – 3 GHz have also been conducted in some areas using RF field strength meter. Levels have been found below recommended ICNIRP's limits for general public.

A new research program is being established at the RRU for identifying all sources of environmental electromagnetic fields, including AM and FM radio, TV broadcast and other EMF sources. The RRU has also established a literature database and electronic library related to EMF issues. Two MSc. students attend a research program related to environmental EMF under the supervision of RRU at the Department of Earth and Environmental Sciences of Al-Quds University.

Activities from other institutions are also focused on mobile telephone base stations. **Beir Zait University** has investigated the emissions from one base station mounted at the roof of the university building. The maximum EME level found to be well below the international recommended exposure limit. **Environment Quality Authority** and the **Ministry of Telecom & Information Technology** perform control measurements to ensure the safety of EMF sources.

#### Policies and Legislations

There are no specific laws regarding the exposure of public to electromagnetic fields. Existing policy is to adopt international guidelines. *The Environment Quality Authority (EQA)*, which is the governmental supervising body responsible for setting standards and enforcement concerning the protection of the public and the environment against both ionizing and non-ionizing radiation issued a "Mechanism of the EQA in granting approvals for the mobile phones base stations". According to this mechanism, the primary criterion used in analyzing the conditions of base stations is the level of power density the public is exposed to. This level must not exceed the maximum permissible amount based on international guidelines. Approvals go through two phases: **First**, the operator applies for a "construction permission" providing all technical data for the station and all site specifications. The EQA carries out a site visit to study and verify the provided information. Once all the safety regulations are fulfilled, the EQA issues a special "construction permission". The presence of schools and kindergartens is taken into account, such that the site must fulfill more strict criteria or even not being granted the permission. **Second**: After installing the station, the operator applies for an "operation permission". This permission must include (in addition to other specifications), a

permission from the related municipality. The adherence to the specified conditions and specifications is verified during the construction phase, after which the date for the operation test is set. The operator provides the EQA with results of measurements of radiation levels at location close to the nearest building. EQA could carry out its own test to verify the results. If the levels of radiation are within the adopted permissible limits, the EQA issues the operation permission. The operator commits itself to providing a semi annual report enclosing all the radiation levels measurements at the closest buildings for all its base stations.

*The ministry of Telecom & Information Technology*” issued safety procedures at sites of GSM mobile phone system”. These procedures Include: instructions for site arrangements, safety guidelines to protect the public living near the site and workers during maintenance, and the need for performing radiation measurements (at least annually) to ensure the compliance with safety standards. This ministry also applies international standards for controlling EMF levels.

### **Public concerns, responses and information activities**

In Palestine there are about nine hundred thousands of mobile telephone subscribers (about 24% of the population). The Palestine cellular Communications Ltd. (Jawwal) covers about 47% of the Palestinian cellular market, the remaining portion is covered by Israeli operators. Jawwal operates about 282 base stations distributed over the West Bank and Gaza Strip. Other base stations in the West Bank and Gaza are operated by Israeli operators and are located in areas that are not accessible for the Palestinians. Other Israeli sources of EMF may also be located on the west Bank and Gaza.

Over the West Bank and Gaza, there are also about 60 local / private Palestinian Radio and TV stations transmitting at FM and UHF frequencies.

Base stations are the **main focus of public concern**. There is a growing opposition to the siting of base stations. Mobile phones and microwave ovens being at the second place. In some cases, base stations were interrupted because of public opposition. ELF is of no, or of very low concern. In **response** to these concerns, consultations have been made between operators, scientific community and governmental representatives. Operator funded a research in both Al-Quds and Beir Zeit Universities. The Environment Quality Authority performs some information activities within environmental awareness programs. The Radiation Research Unit at Al-Quds University translates International EMF fact and information sheets into Arabic language. These sheets will be available for public and local authorities as well. Furthermore, the RRU is preparing its own booklet to be delivered among people and published on the web. Upon request, the RRU issues reports about radiation levels for base stations of interest. Plans are also prepared to address these issues via media. In explaining health consequences from exposure to EMF, we take advice from International EMF project publications. The Palestine cellular Communications Ltd. issued a booklet containing basic information about EMF, base stations, their physical properties and health effects.

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