

COUNTRY REPORT ON EMF IN MALAYSIA
26th EMF PROJECT INTERNATIONAL ADVISORY COMMITTEE (IAC) MEETING

In Malaysia, there remains a great concern among public regarding the health effects caused by non-ionizing radiation (NIR). Therefore, the local authorities such as Ministry of Health Malaysia (MOH), Malaysia Nuclear Agency (MNA), Malaysian Communication and Multimedia Commission (MCMC), and other relevant parties have been engaged in continuous cooperation in order to ensure that the general public has the accurate information and be updated occasionally.

Below are the summaries for the NIR activities that have been carried out in Malaysia throughout the year of 2020:

NO.	ACTIVITIES
1.	General Research i. MOH is collaborating with a local university, Universiti Putra Malaysia (UPM) to conduct a questionnaire survey on the Magnetic Resonance Imaging (MRI) scanners usage in the country. The main objective of this questionnaire is to assess MRI facilities at hospitals in Malaysia. It includes evaluating the MRI suite's design features, the standard operating procedures and its compatibility with the national and international guidelines. The results of the study will provide a country baseline data and can be used as a guide to plan and improve current surveillance of MRI facility in Malaysia. In addition, this will assist in enhancing suitable training programme for the MRI users. ii. Several research activities were conducted by MNA. These includes: a. Development of 5G radio frequency electromagnetic field (RF EMF) measurement methodology; b. A preliminary study on RF electromagnetic field exposure from 5G and Non-5G Transmitter in Langkawi, Kedah; c. A study on UVC irradiance emitted by various type of UVGI Products; d. A profile study of UVC irradiance from UVGI samples; e. Development of laser safety management program in Malaysia; f. Development of safety assessment methodology for UVGI device; g. Safety assessment and evaluation on hand held laser pointer; h. A study of RF EMF compliance for radio communication infrastructure (RCI). iii. In July 2020, MCMC has initiated collaboration with a local university, University of Malaysia Perlis (UniMAP) to study on the effects of short-term 5G base station signal exposure on cognitive performance, well-being and physiological parameters of the Malaysian adults.

NO.	ACTIVITIES
	iv. There were also several research activities carried out by a local university. The Wireless Communication Centre (WCC), Universiti Teknologi Malaysia (UTM) is actively conducting the following research: a. Research on 2G to 4G RF EMF public exposure level. The field measurements are conducted using industry-grade RF-EMF meter; b. Research on methodology for the measurement of 5G RF-EMF exposure. The key objective is to study the code-selective methods in measuring RF-EMF exposure from the 5G base stations; c. Research on EMF radiation studies for 5G base station at millimeter wave band. This aimed to investigate the amount of radiation from arrays of antenna in an indoor and hallway environment based on the power density; d. Mathematical modelling of electromagnetic field exposure from cellular base stations. This work focuses on mathematical frameworks to investigate the EMF exposure of sub-6 GHz and MMW BSs by using a stochastic geometry approach.
2.	Public Concern and National Response i. In 2020, there was an outbreak of the COVID-19 pandemic reported globally. This has affected all sectors of the world and the community and social gatherings was limited. Given the current outbreak of COVID-19 disease caused by the novel coronavirus SARS-CoV-2, some medical facilities or public may be interested in purchasing Ultraviolet-C (UVC) lamps to disinfect surfaces in the home or similar spaces. MOH and MNA have played their important role in consulting this issue. ii. The RF-EMF based smart meter infrastructure is being rolled out in Malaysia for the electricity management and billing. The local electricity provider has initiated the collaboration with MOH and WCC, UTM to perform the radiation measurement of the smart meter to debunk the myths circulating in social media regarding the health impacts of RF-EMF based smart meter. iii. In August 2020, the MOH has organised a webinar to increase the awareness among the public pertaining to NIR safety aspects and health effects on 5G technology. iv. Three public awareness program were conducted by MNA in related to address public concern for radiofrequency emits by the telecommunication structures. v. MNA also provided consultancy services on RF EMF safety assessment around telecommunication structure, NIR safety assessment at manufacturing plant and UVC safety assessment for Ultraviolet Germicidal Irradiance (UVGI) products.
3.	Public Information i. "Handbook for Laser in Medical Usage" have been printed by MOH to be used as a guidance for the related users. This is an alternative measure as the act and regulations for the laser equipment is not ready in the country.

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	ii. MCMC continued to offer courses on “Management of Public Awareness and Complaints on Radio Frequencies Electromagnetic Fields (RF-EMF) from Telecommunication Infrastructure” to local authorities and government agencies. The course aims to provide comprehensive understanding of RF-EMF and help the authorities in managing concerns over EMF emission to the public. iii. The WCC, UTM had carried out the training course series, e.g., “Management of Public Awareness and Complaints on RF-EMF Emission from Telecommunication Infrastructure”, “Smart meter: RF-EMF radiation and Health Concerns” and etc.
4.	Current development on policies and legislative document MCMC is currently reviewing the Commission Determination on the Mandatory Standard for Electromagnetic Field Emission from Radio Communications Infrastructure - Determination No. 1 of 2010 (MS for EMF). The MS for EMF sets out requirement for the network service operators to comply in operating their telecommunications infrastructures and to ensure radiation levels surrounding at the infrastructures do not exceed the EMF exposure limits as recommended by the International Commission on Non-Ionising Radiation Protection (ICNIRP). The MOH and other stakeholders also reviewing the following documents: a. Technical Standard for Prediction and Measurements of EMF Exposure from Base Station (MCMC(T)13-TDD/170/001 JLD 1 (02)); b. Code of Practice for Lasers in Medical; c. Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic and Electromagnetic Fields - Part 2: for frequency from 100 kHz to 300 GHz-First revisions (16E017R1-2019).