ABSTRACT

The project described in this proposal aims at the development of a three-dimensional real-time simulator of the electromagnetic radiation and interference caused by radiating equipment. The simulator is capable of accommodating several radiating structures typically present in a control room environment. The simulation results are of a great value as far as the design and placement of equipment is concerned. For example, the radiation patterns of several high-speed electronic circuitry (e.g., personal computers) can be extracted. These patterns indicate the radiation directivity and strength such that EM interference with other signal-sensitive equipment can be avoided. Several other parameters including radiated power, radiation impedance and resonance frequency can be evaluated.

The developed models can be utilized by all industries and work sites where radiation-sensitive signalswitched equipment are in operation. Also, the simulator can be tied to existing electronic-design automation (ED A) to provide EMC analysis.