Intentional Electromagnetic Interference (IEMI) Simulator Compendium

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The last decade has seen tremendous progress in the understanding of the threat of narrowband and ultrawideband environments. The theoretical and experimental investigations of effects caused by Intentional Electromagnetic Interference (IEMI) resulted in the development of a set of environment waveshapes of interest as described in IEC 61000-2-13. As IEMI caused damage or failures in electronic parts of critical systems and devices can result in technical or financial disasters as well as to injuries or the loss of life, there is a need for industry to test their equipment and systems to these IEMI threats.

Due to this development IEC TC 77C started to work on a technical compendium that provides information about existing simulators that could be used as IEMI simulators. In addition to characteristic parameters of various simulators the final document will indicate their applicability as test facilities and validation tools for IEC SC 77C immunity test requirements. In the sense of this specification, the group of IEMI capable simulators consists of high and medium power narrowband microwave test facilities and ultrawideband simulators for radiated fields.

This talk briefs on the current status of this project. It starts with an introduction to the field of IEMI immunity testing and a presentation of the overall schedule of the new project. A general description scheme for simulators that can be used for IEMI testing will be introduced in the main part of the talk. In addition to the technical characterization, the scheme addresses more commercial aspects such as availability, costs and operational status. The introduced scheme will be exemplified by a collection of datasheets describing narrowband, wideband and ultrawideband facilities and simulators that are still operational or could be made available for use by the international community.