Subject	**Open access web database of interference causing devices**		
Society	**UBA**	Country:	**Belgium**
Committee:	**C7**	Paper number:	**LA17_C7_07**
Author:	**Serge Stroobandt, ON4AA**		

1. Introduction

This proposal calls for creating an open access database for reporting and looking up devices causing interference and being suspected of not complying with EMC regulations as required for mandatory CE conformity marking in the European Economic Area (EEA).

2. Background

CE marking is mandatory for certain product groups within the European Economic Area (EEA; the 28 member states of the EU plus EFTA countries Iceland, Norway and Liechtenstein) plus Switzerland and Turkey. The manufacturer of products made within the EEA and the importer of goods made in other countries must ensure that CE-marked goods conform to standards.[1]

The problem arises from the fact that CE marking is by large a self-certification scheme and manufacturers or importers are responsible for identify the applicable Directive(s) and assessing the product's conformity.[1]

An increasing number of manufacturers and importers are either oblivious to the pertinent EMC regulations, intentionally ignoring some or all of these, falsifying EMC conformity tests or performing conformance tests in unrealistic product settings. All cases lead to unlawful CE marking misuse.

Controlling products bearing CE marking is the responsibility of public authorities in member states, in cooperation with the European Commission. Citizens may contact national market surveillance authorities if the misuse of the CE marking is suspected or if a product's safety is questioned.[1]

The situation is aggravated by many of the national regulatory telecommunications authorities lacking the means and personnel for adequate EMC product inspection and law enforcement. For example, UK's *Ofcom* recently conducted a consultation on how to improve its enforcement strategy.[2]

Despite this bleak and despairing radio landscape, the current situation presents itself as a unique opportunity for the amateur radio community to demonstrate its relevance towards society as ultimate wardens of a clean electromagnetic spectrum. Among the IARU R1 EMC Working Group's aims are listed:[3]

- to exchange information related to all aspects of electromagnetic compatibility (EMC)

- to bring potential EMC threats to the Amateur and Amateur Satellite Services, from emerging technologies, to the attention of the External Relation Committee (ERC) and Political Relations Committee (PRC), tasking the latter through the Executive Committee (EC) to influence relevant legislative changes and implementation, internationally and nationally.

These aims fit the present proposal for setting up an Internet based open access database where any member of the radio amateur community can report or look up devices that cause interference and are suspected of not complying with EMC regulations.

Regulators, politicians and the general public will only become aware and convinced of the scope and extent of the failing EMC policies when hard factual data and statistics are made available.

As amateur radio operators, we are certainly not the sole victims of electromagnetic interference. In February 2017, the US Defense Advanced Research Projects Agency (DARPA) organised a three day Software Defined Radio (SDR) hackfest event in Brussels. This event was open to any individual of the general public who feels identified with the SDR community. The accompanying document[4] clearly states the reason for reaching out to the European SDR community: DARPA and the U.S. Department of Defense (DoD) have a keen interest in characterising interference from incidental emitters/radiators. These are defined as devices that generate RF energy during the course of their operation but are not intentionally designed to generate or emit that energy. The following quotes from this DARPA document echo concerns similar to ours:

[…] spectrum regulators are becoming increasingly concerned that background noise and interference has (or will) become the performance-limiting factors in the envisioned proliferation of wireless communications […]
Sources of incidental RF emissions are numerous. Among them are microwave ovens, car engines, power lines, digital electronics, railway systems, USB keyboards, and RF LED lighting products.

This opens potentially interesting venues for a cooperation between the IARU and DARPA in an effort to identify and characterise non-complying devices as sources of EMI. The DARPA contact is Tom Rondeau thomas.rondeau@darpa.mil

3. Key points and proposal

1. CE marking is by large a self-certification scheme.
2. An increasing number of manufacturers and importers are committing CE marking misuse fraud.
3. National regulatory telecommunications authorities are lacking the means for adequate EMC product inspection and law enforcement.
4. Regulators, politicians and the general public will only become aware of the scope and extent of the failing EMC policies when hard factual data and statistics are made available in an open access database.
5. Radio amateur operators, after registering, should be able to report devices suspected of producing EMI. The general public should be able to consult this open access database

without registering. The database should become a useful tool in making purchasing decisions.

6. Other governmental agencies like the US DARPA are equally interested in a clean spectrum and characterising sources of EMI in Region 1. The same holds for consumer protection organisations. This may open venues for collaboration if deemed beneficial.

4. Recommendation

The following recommendations are proposed:

1. An internet based open access database will be created, allowing any member of the radio amateur community to report or look up devices that cause interference and are suspected of not complying with EMC regulations. The database will be indexed by product category, manufacturer/importer and model name/number. Every database record will contain at least an uploaded picture of the product and a description of the suspected interference issue. Additional media (pictures or audio) in proof of the interference may be added to the record. Reporters will have to register with contact information which will be kept confidential by the IARU. Reporters can at any time edit or delete their EMI reports. Once an issue with a specific device has been reported, other amateur radio reporters may add to the record and indicate if they are equally affected. Any addition to an existing record remains clearly distinguishable as an addition made by another reporter. A special record field is reserved for the IARU to confirm or debunk the EMI issue in collaboration with the national regulatory telecommunications authorities responsible for EMC enforcement. The online database may optionally contain a gamification element (e.g. reputation points) in order to foster reporting. The online database can be consulted by the general public without registering.

2. A collaboration in setting up this database with the US Defense Advanced Research Projects Agency (DARPA), consumer protection organisations and/or any other open data initiative may be considered if deemed beneficial.

3. If proofed successful, this EMI device database may become a powerful tool for the work of the External Relation and Political Relations Committees.

References

1. Wikipedia. CE marking. Available at: https://en.wikipedia.org/wiki/CE_marking.
2. Ofcom. Ofcom's approach to enforcement – Consultation on revising the enforcement guidelines and related documents. Available at https://www.ofcom.org.uk/__data/assets/pdf_file/0024/96810/enforcement-consultation.pdf.
3. International Amateur Radio Union Region 1. EMC – Terms of reference. Available at https://www.iaru-r1.org/index.php/emc/emc-terms-of-reference.
4. Tom Rondeau. DARPA Brussels hackfest problem book – Understanding our electromagnetic environment. 2017. Available at https://custom.cvent.com/66334BCE67BE46BBB7BF379E8984CFBF/files/c40f12b66cd04b53bc3eb176a8dabcee.pdf