



International Amateur Radio Union Region 1

2017 General Conference – Landshut, Germany

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Subject	Background noise measurement campaign		
Society	NRRL	Country:	Norway
Committee:	C5 (also C4 and C7)	Paper number:	LA17_C5_10
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1. Introduction:

A proposal for IARU to make an initiative to a noise measurement campaign, where individual members of the Member Societies can measure noise, and report the results in an easy way without elaborate test equipment.

2. Background:

The main threat to the use of amateur radio today is the increasing RF noise floor made by numerous "modern" electronics like:

- Switch-mode power supplies
- Powerline communications
- Digital Subscriber lines
- Etc.

In many professional and semi-professional fora, there is an ongoing debate whether the general noise level is increasing or not. While such an increase will be evident to most active radio amateurs, more documentation and justification of this is needed, in order to allow us to protect our spectrum allocations better. However, the professional specification for noise measurements, ITU R-REC-SM.1753-2-201209, seems to be too ambitious for radio amateurs to deal with. Noise, in the ITU definition, is unintended signals. The main question is therefore: Does a simplified approach give us useful information about the noise situation, and can this over time give trend information? For such a simplified approach to give reliable data, the process must be made so simple that we get sufficient contributions/participants to produce statistical significant results.

3. Key points and proposal:

This paper suggests that the IARU Region 1 starts a campaign within their member societies to have as many as possible individual members/radio amateurs do some simple observation/measurements of their local RF-noise. Then with a simple system to report these observation/measurements, they will be processed and presented in easy to read, but important graphs, to show today's situation on RF-noise in the amateur bands. If sufficient data is gathered over time, statistical info can be presented in the future.

Such a campaign will enable IARU to present representative figures for the increased noise floor over much of Europe. But for the results to be of use, it is necessary to have a large number of participants in many countries. For this to be possible, a simple measuring method, using readily available amateur equipment, is necessary. It is the intention that all active radio

amateurs should be able to participate.

The key elements of the campaign will be:

- Simple instructions to all participants.
- No need for elaborate measuring equipment.
- Everyone will get access to a relative simple piece of software provided by IARU, where each individual can input their measurement conditions and results. One example on how such software could be made can be found in the “NoiseReporter” program, made available on the Region 1 Website by Thilo Kootz, DL9KCE. This program is still in its first version, and is made according to the ITU-R P.372-12 recommendation.
- The results should then be sent to a common place (database) for post processing.
- The results will be presented in an easy and clear way.
- After some time, the campaign will be evaluated, to determine if it should be continued, and to allow for changes to be implemented.

Given sufficient data, IARU can have an independent opinion on the noise situation and the development over time.

4. Recommendations:

This paper recommends the 2017 IARU Region 1 general conference to start a simple noise measuring campaign among its members. Hence, enabling IARU to be able to have an independent opinion on the noise situation in the bands, and the trend over time. A data collection and processing system has to be developed. The input data has to be provided by the users (members).

For this campaign to be successful, each member society must inform and motivate all their members to the usefulness and need for this campaign, in order to let as many members as possible participate. All necessary information must be easily available to everyone.

Necessary action:

1. The IARU Region 1 General Conference 2017 agrees on the intention.
2. Each Member Society (MS) makes this program and the software known to its members (via their HF- and VHF-manager, and EMC-managers).
3. The IARU Region 1 EMC-Committee is the main responsible for the campaign, and decides on relevant changes, and also performs the necessary final evaluation.
4. Simple software is made available to all members of the IARU Member Society in each country – hopefully we can use the “Noise Reporter” from Thilo DL9KCE with minor updates/modifications.
5. A software tool is developed to receive the results from individual radio amateurs/contributors (we are still seeking someone to do this).
6. A software program is made to give a clear and easy to read presentation of the reported information (also this task is still open).