

Sonification Think-Tank

19-06-2013

« GSM waves sonification »


To help finding GSM phones, we propose to enhance Direction Finding systems.

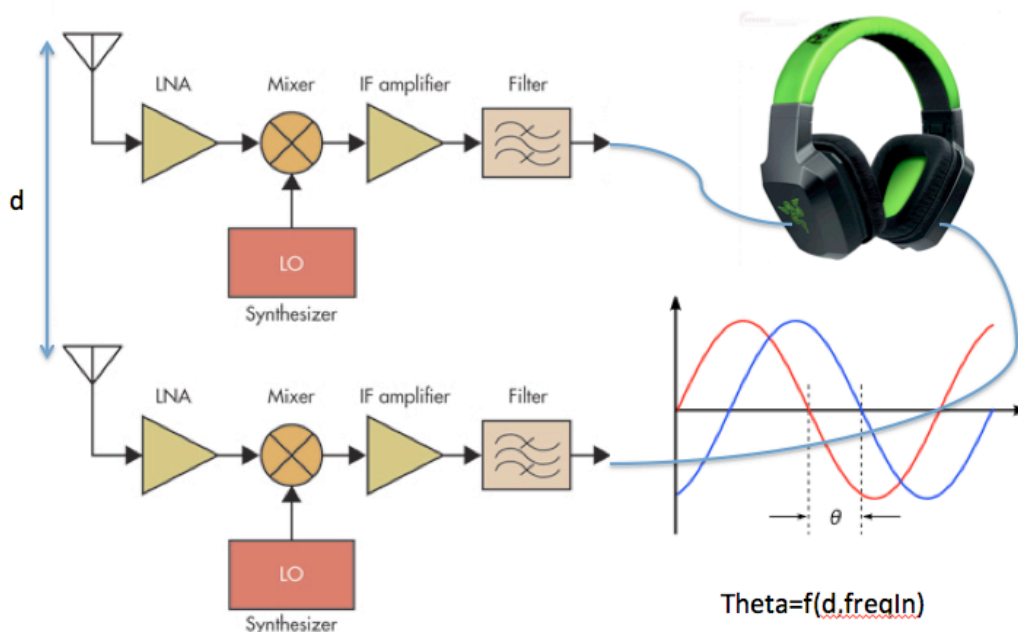
The end user is supposed to be guided towards an emitting GSM phone through acoustic cues only.

The GSM phone emits only Electro Magnetic (EM) waves in the GSM (900MHz) and DCS (1800MHz) bands.

The thesis objective is to **transfer the decision process** (which direction to take?) **from the machine** (actual Direction Finders) **to the end user** (sending "raw" signals, at least without Direction Finding process), as for sonar operators.

Proposed designs are:

- 1) ON THE SHELF: a basic EM Direction Finder is linked to a spatialization engine. Instead of having the (theta,phi) information on a screen, the end user hears a sound source in that direction.
- 
- 2) IPD / ILD BASED: Using the Interaural Phase Difference and Interaural Level Difference **directly transposed** from a set of *EM ears* (2 antennas), is it possible to determine the GSM direction?



- 3) HRTF BASED: still with a set of *EM ears*, is it possible to reproduce HRTFs in the EM domain? (false metallic ears? Human ears with small antennas?).