Triangulation by Sound

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Abstract: The premise behind GPS is that a single receiver can locate itself relative to a set of several fixed beacons. In GPS, satellites serve as the fixed beacons and transmit electromagnetic data signals to receivers on the ground; the delay from each of the satellites indicates the distance from that satellite. We aim to implement this concept with sound, with two or more (connected) beacons making noise every so often at a frequency that identifies each. The location of an (if we are successful, independent) receiver microphone will be determined from the relative delays from the several beacons. This information can then be displayed to a screen. An early version of the project will use two beacons and will thus measure the receiver's microphone along a single fixed axis.