TRIBOACOUSTIC LOCALIZATION SYSTEM FOR MOBILE DEVICE - ENVIRONMENTAL EFFECTS TO ACCURACY

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Abstract - This paper simulates and discusses about the probable causes of error which might occur due to the environmental settings of the triboacoustic localization prototype previously developed. Erroneous conditions studied are sensor offsets and temperature mismatches while existing errors due to equation deficiencies are taken into considerations. Descriptions of the hardware prototype and combinational system functionality which is to be simulated is described prior to the simulation and experimental step. It was found through simulations and verified via experiments that some environmental settings do have a large impact upon final outcome (x,y offset and z offset) while some have negligible effects to the final outcome(temperature).

Index terms : Triboacoustic localization, simulated errors, wearable computer, mobile device;