Abstract
This research highlights new innovation and hope for the blind. It demonstrates that we can move on from simple sticks (reference to the White Cane) to a more reliable, efficient, and overall, a better way in aiding blind individuals to be more independent and productive. It is intended to solve one of the basic functions of the white cane, that is, to detect objects in front of a user, making them aware of said objects, and to naturally avoid them. This is one of the fundamental purposes of the white cane and to develop a tool with similar properties is to establish a basic foundation at which more research can be built upon.

Results from the research proved inconclusive; however, the findings from the experiments conducted showed that the experimental navigational tool had a high degree of usability. Also, users were learning how to use the tool rapidly with every session, especially with blind participants. One of the main reasons of the results being inconclusive was due to the fact that there was a very small sample population to conduct the experiments since a reasonable size population was needed so as to rule out individuals’ behavior in order to gain a collective understanding of the results. Another reason is that 50% of the participants had a minimum of 2 years experience with the white cane as opposed to 10 minutes with the experimental tool.

Overall, the research shows huge potential for that fact with added time give to participants with the navigational tool, the results would prove more conclusive and proving that it can be a replacement or substitute of the white cane. The most significant part of the research is that it forms a basis for which other technologies can be incorporated such as Global Positioning System allowing users to be aware of where they are, directional reference where users are aware where is north as a reference of direction and voice activated commands just to name a few.

Keywords: Blind Aid, Navigational tool for the Blind, Haptic Sense.

Evaluation Results
User Evaluations were conducted on sample of 8 persons, 4 of which are visually impaired and 4 individuals from the University of Guyana (Control Group). The trials were conducted using 2 Blind Aids; The White Cane and the Experimental Navigational Tool (VibraSense). Two Simple Obstacle courses were created and the time taken to complete these courses using the Blind Aids one at a time, was recorded. The results show that the blind individuals have a greater adaptability to blind aids since they had the shortest times in the trials while being introduced to VibraSense.

Results cont’d
The Results from the questionnaire to determine statistically how well the new navigational tool compared to that of the White Cane in terms of interfacing with the user and how the participants used the new tool in real world situations. The results of the Chi Square Test showed a deviation of less than 5% indicating that the navigational tool according to the sample can substitute for the white cane however, since the sample population was very small we cannot establish that this is the opinion of the general population of blind individuals.

Responses from the Questionnaire depicted in Figures 3 and 4, suggest that the users genuinely understand how the new navigational tool works and how to use the device since in the questionnaire the statements were alternated from positive statements and negative ones as a precaution so users would not be bias in answering the questionnaire. Comments from the participants that were blind suggest that given more time to be acquainted with the new navigational tool, they would have performed better in the trials. From the feedback, participants appeared to cope well with using this new navigational tool in terms of the signals being given to the users and their ability to interpret these signals. It also suggest that there was no resistance to change issue in the evaluations based on the comments from the participants.

Remarks
This research have proven to be inconclusive due to the unavailability of participants so as to generate a more accurate opinion of the general population in terms of the new navigational tool. However, from the data collected, there is a strong indication that the developed experimental navigational tool, which represents a tool of this modern age, can most likely be used to aid blind individuals in navigating their immediate surroundings.

Table 1. Shows the percentage distribution of responses of the Likert Test

Table 2. Shows the results from the Chi Squared Test