

## Hong Kong Student Science Project Competition 2022

Template of Extended Abstract (Invention Design Proposal)

(Word Limit: 1,000 words, Pages: 2 pages only)

**Team Number: JCPE075**

**Project Title: Trust between Blind Stick**

**Project Type: Invention Design Proposal**

**To our best knowledge and after thorough literature research, as at 30 / 06 / 2022 , there are / are no\* similar works. If there are, the reference links are as below:**

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**The enhancement our project has made for the existing related products or research is summarized as below:**

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**\*Please delete if not applicable. HKSSPC values the originality of works. Students must conduct literature research thoroughly to ensure that their works are unique, and to list relevant reference materials to complement the research or invention.**

### **I. Background**

According to the Hong Kong Blind Union, there are 174,800, accounting for 2.4% of the total population, which is a large population in need of services. They are deeply affected by their diseases. In order to improve the living standard and convenience of blind people, we think that it will be a good idea to improve the traditional blind stick, and create a brand new smart blind stick, which has used different technology such as face detection and Bluetooth. The functions and uses can even overtake and go beyond normal smart blind sticks

### **II. Objective(s)**

➤ State the **aim(s)** of project

Our aim of this project is to improve the lives of blind people. The smart blind stick is an ameliorated version of the traditional blind stick

### **III. Methodology**

**In order to make the perfect smart blind stick, the smart blind stick combined a variety of technologies, such as human face detection, Bluetooth, and ultrasonic sensors. It can contribute to the security, life standard and convenience of blind people. Compared to traditional blind sticks, there are a lot more useful functions, for example human face recognition to prevent criminals from the blind people.**

**To summarize, smart blind sticks are an improvement targeted for patients who suffer from blind diseases, in order to improve their living standard, as well as level of security. We believe that it will be beneficial for society.**

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#### **IV. Design of Invention**

The blind stick designation is a stick with a handle, involving the sensors attached to the bottom of the stick for road scanning and ensuring safety. There is also an auto-balancer, which can detect the falling action.

#### **V. Application / Market Need**

Application: When blind people use the smart blind stick, they can prevent injuries, road accidents such as bumping to others, obstacles, falling onto the floor, criminals such as scammers, robbers, pickpockets and more. Also the design can cover blind spots of traditional blind sticks and to reduce the effects to other people. This creation can help a lot of blind people in the society and might replace traditional blind sticks and normal smart blind sticks.

#### **VI. Conclusion**

**To conclude, this is a beneficial creation to society, especially the blind community. To move forward of the invention process, we must cooperate with unions and technology companies or universities to work out for further progress.**

**Our project is developed based on our school's previous project and the enhancement is as below:**