

## NEW PRODUCT DEVELOPMENT



### JPJ SPEED TRACKER

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## **1.0 EXECUTIVE SUMMARY**

Our team is developing a device called "JPJ Speed Tracker". The main purpose of this project is to monitor the speed, location of public transport specifically express buses and it transmit instant signal to authorities if an accident happen to the public transports. It is a small and portable device consisting of accelerometer that monitor and detect the speed of vehicle, a Global Positioning System (GPS) for determining the position of where the bus located across the globe and the most important thing is a signal transmitter, where all the information will be transmit, send to Jabatan Pengangkutan Jalanraya (JPJ) and other authorities. Our project also includes the development of a receiver software, where all the information of gathered by the device will be received and can be observed using the software. Hence, authorities can monitor the movement of our public the bus and in the same time make sure if they exceed any speed limit or anything happen to the bus, they can intantly oin point the location and give quick action. Our survey on 20 authorities including polices, JPJ personnel and regular public transport user, they think that this product suitable to be installed in our express bus and it should make the our bus much safer because as our Ministry of Transport said on its interview by The Star "We are quite perturbed by the rate of accidents happening on these roads,".

## **2.0 INTRODUCTION**

### **2.1 PROBLEM STATEMENT**

High speeds of public transport especially express bus are usually the one of the factor causes of accident at road. Statistics by Royal Malaysia Police states that accidents involving express bus increase significantly since 2000.

### **2.2 METHODOLOGY**

The following method are used to study the issue of high speed of bus express by reading a journal of study on speeding among Malaysian express bus. Accident happened at highway involving crashes between express bus and other type of vehicles such as cars, motorcycles and lorry. Furthermore, according to the Star online in November 2017, twenty people were injured when an express bus crashed into the divider and overturned at the North-South Expressway near Rawang.

## **2.3 LIMITATION**

This device may function with limited signal due to low coverage at certain area that has low coverage.

## **3.0 TECHNOLOGY DESCRIPTION**

### **4.0 NEW PRODUCT DEVELOPMENT**

#### **4.1 Definition**

The team plans to build a device that can record, track speed and locate the exact location of the bus. Thus, it is name as "JPJ Speed Tracker" because the main function of the device is to track the speed of the express bus and transmit a signal to the JPJ headquarters if the express buses exceed the allowable speed.

#### **4.2 Classification of NPD**

The device is portable small devices with high durability that can withstand great impacts. The components consist of accelerometer, GPS, mass storage and signal transmitter.

### **4.3 NEW PRODUCT DEVELOPMENT PROCESS**

#### **4.3.1 RESEARCH AND DEVELOPMENT**

##### **IDEA GENERATION**

Idea generated by reading the journal of study of speeding among Malaysian express bus. It is supported by the statistics that is released by Royal Malaysia Police (RMP), express buses recorded the highest percentage of total bus crashes during the 3 year period from 2007 to 2009.

##### **IDEA SCREENING**

Our team manages to come up with three early idea of devices with almost the same function, monitor speed location and transmit information

- An application that passenger could download and report any traffic mistakes

- A transmitter that give information of the bus journey to the company of the bus
- A small device that transmit information of bus location, speed and can also transmit emergency signal to authorities.

As a result from a few interview with respondents and some discussion, the third idea was chosen because it is transmitted to authorities, where they can give a best action if anything bad happen to the bus.

### **MARKET SURVEY**

Interview with respondent for some survey show that our chosen product are helpful not just for the authorities to monitor the journey of the bus, but also provide instant signal of emergency transmit to them if anything bad happen to the bus.

### **4.3.2 PRODUCT DESIGN AND FEATURES**

JPJ Speed Tracker is devices that monitor the speed, location of a vehicle specifically an express bus. It also can transmit information wirelessly to the receiver, a software that also is develop to help the authorities to access the information. This devise also give an instant emergency signal to the receiver if an accident happen to the express bus. Then, this device also records the journey of the express bus by keeping the memory inside a mass storage build in inside the device. The device have USB port to make it is rechargeable, so that it can function 24/7 without any problems. Besides, it is much safer and faster to deliver the data from this device to another device. The idea of the design is taken from a pendrive, it is because we planned to make the devices to look small and portable.