RFID IN HALAL TRACKING SYSTEM

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ABSTRACT

The lack of information presented on the food packaging of specific food product usually lead to confusion, thus redundant unsold goods are stacked-up in the shopping market. Barcode, labels and ingredients information by far is not adequate to authenticate the validity of the food information claimed by the manufacturer or food producer. This long-established approach fails to inform the users and no longer fits in this cyber world. Much work has been carried out to find the best solution to ensure information presented on the food packaging is valid yet legitimate. In similar cases by big food store, shows the agility of RFID has assist them to better track their food status. The idea of this tracking system is to help consumer to have the knowledge and also the power as the consumer to assist them to make a decision which product they can buy or not. With this tracking systems they also can track down manufacturer and also if the manufacturer follows the Islamic guidelines. Other than that it also can help the authorities' body to always keep track which each of the manufacturer maintain standards and guidelines of the Islamic Law. The tracking systems that will be developed are called RFID in Halal Tracking System.

ABSTRAK

Kekurangan maklumat berkenaan dengan produk makan selalu membawa kepada kekeliruan kepada pengguna. Dengan kekeliruan ini menyebabkan banyak barangan yang tidak habis dijual. Dengan adanya barcode, label-label pada pembungkusan produk dan juga maklumat berkenaan dengan bahan produk masih tidak mencukupi untuk mengesahkan kesahihan produk tesebut. Pendekatan ini tidak lagi sesuai untuk pengguna memandangkan dunia masa kini telah beralih kepada dunia siber. Banyak kajian telah dilakukan bagi mencari penyelesaian ini bagi meastikan maklumat yang terkandung pada produk sampai kepada pengguna. Dalam kebelakangan ini banyak kompleks membeli belah antarabangsa menggunakan RFID sebagai satu jalan penyelesaian. Teknologi ini telah membantu mereka untuk mengesan status produk makanan yang terjual di pasaran mereka. Sistem pengesanan yang dibina ini, di bina untuk membantu pengguna memperolehi pengetahuan dan juga kuasa sebagai pengguna bagi membantu mereka membuat keputusan berkenaan dengan produk yang mereka bakal beli. Dengan sistem ini juga pengguna boleh mengesan siapa yang mengeluarkan produk makanan dan juga adakah produk yang dikeluarkan mematuhi hukum Islam. Selain itu ia juga boleh digunakan untuk membantu pihak berkuasa dalam memantau pengeluaran produk daripada pihak pembuat sama ada mereka mematuhi hukum Islam atau tidak. Sistem pengesan yang akan di bina di beri nama RFID in Halal Tracking System.

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CHAPTER 1

INTRODUCTION

1.1 Project Overview

Tracking is a process starting with determining the current and past locations and other status of property in transit. Tracking and tracing is the completion of this process with uniformly building a track of such property that are forwarded to, processed for, applied in or disposed of usage. Meanwhile, '*system'* means 'a complex whole; a set of things working together as a mechanism or interconnecting network[19]. The proposed of this tracking system is by combining two gadgets as a device to track an item. The first device is Radio Frequency Identification (RFID) and second is Global Positioning System (GPS) as a tracking device.

RFID is a technology that has known for almost 60 years. In these recent years RFID technology has recently attracted considerable attention in supply chain management. Many companies consider the costs and benefits associated with adapting the RFID technology as mandated by retailers such as Wal-Mart, Target, Tesco, Metro and the US Department of Defense. In Malaysia this technology is still yet a new comer since it's only apply in some industrial such as agriculture. The

usage of this technology in other industrial more on card RFID such as Touch & Go card that use in toll payment system others than that in airport bag system..
The technology uses an integrated circuit with antennae, known as a “tag,” that can be attached to the item, case or pallet. By installing readers at appropriate locations, the movements of the tags can be tracked.

Its capacity in tracking involving a complicated system to an ordinary system makes it one of the best tracking tools of its kind. Tracking system using RFID covers from the high-end business sectors to mid-range usage due to RFID’s feasibility in the number of applications available today. In food and packaging industry all around the world, RFID tracking system is picking up momentum as it is being utilized to cater the demand of tracking inventory besides theft cases in the hypermarket.

As for the tracking system, the RFID is not enough by its own. Using GPS as another device can track where the item that been tag to its owner. Owner of the item can know the position of its item where by the item still in the truck or already moves out by a shipment. The system work with the package send out a radio frequency signal, RFID interrogator inside the back of the truck or in the building picks up the signal, the computer network on the truck or in the building send out a message letting the owner computer know what is where and finally the GPS system tells the owner where the truck is if the package is currently on a truck.

1.2 Statement of Problem/Opportunity

The growth of Muslim population, the speed of trade globalization, the advancement in science and technology and the ongoing initiatives to simplify

manufacturing processes makes it essential that the Halal concept be fully understood by marketers. There are estimated to be around 1.8 billion of Muslims around the world today[23]. The Muslims has strong fellowship surrounding food whereby they practice according to a strict food preparation and procedure as governed by the Al-Quran. Halal is an Arabic word that means lawful.

For a food or drink product to be approved for Muslim consumption it must conform to the Islamic dietary laws as specified in the Al-Qur'an, the *Hadith* or sayings of the Prophet Muhammad (Peace and blessings of Allah be upon Him), his *Sunnah* or tradition, and in the *Fiqh* or understanding of the Islamic Jurists: *Imam Hanafi*, *Imam Shafi'*, *Imam Maliki* and *Imam Hambali*.[22]

Due to advancements in food technology and distribution, Muslims today are more exposed to various ingredients and manufactured foods. While many things are clearly Halal or clearly Haram, there are some things which are not clear. These items are considered questionable or suspicious and more information is needed to categorize them as Halal or Haram. The most common of these are food additives, gelatin, emulsifiers and rennet in cheese manufacture.

These products can become Halal if the raw materials are Halal and the process is agreeable according to the Islamic way. It must be understood that finished food products made from Halal animals are no longer Halal if they have been contaminated by Haram products. Therefore, the Muslim community would have to know whether the addition, ingredients or finished foods contain any Haram substance.

The concept of Halal is not only apply on the manufacturing the food itself, the delivering the product also is a process that have to meet the Halal requirement. If the product is place with the item is Haram so the product itself have been containment. Others from Halal requirement, the tracking item for manufacture also

are another issue. The issue here for the manufacture is the time for the goods is been delivers to the customer. Any reason that can contribute the delay can make the manufacture lost in their business. With these bring bad image for the manufacture itself.

1.3 Project Objective/Proposed Solution

The objectives of this solution are listed as below:

i. Develop a system that can track items for manufacturer using GPS and RID
ii. Develop a system that can put all the data regarding Halal products from the manufacturing company until the ingredient.

1.4 Project Scope

The system that will be a prototype in this research will be focusing on the manufacturing where the system will focus on collecting data that will be needed in RFID tag. The data that will be needed in RFID tag also include Halal information regarding the product. Using GPS, the goods than been track to know its location.

1.5 Importance of Project

The system for RFID in Halal Tracking System or RTrac give a benefits for consumer to track back the food product if its meet the Islamic laws. By tracking the product, consumer can know where the product came from, who manufacturing it, what ingredient that its use and were the product get the certification from Jakim and many more that related to Halal. RTrac also give manufacture to track their goods location as it already been delivers to the customer or just to know the exact location of the goods.

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