Legal Analysis

Year: 2018 Semester: Spring Team: 16 Project: Track-on-Track

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Member 1: Nick Geirland Email: ngeirlan@purdue.edu

Member 2: Nathan McNally Email: nmcnall@purdue.edu

Member 3: Yunsheng Li Email: li1436@purdue.edu

Member 4: Aaron Kaiser Email: kaiser20@purdue.edu

Assignment Evaluation:

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| **Item** | **Score (0-5)** | **Weight** | **Points** | **Notes** |
| **Assignment-Specific Items** | | | | |
| **Regulatory Analysis** |  | x3 |  |  |
| **Analysis of Patent 1** |  | x3 |  |  |
| **Analysis of Patent 2** |  | x3 |  |  |
| **Analysis of Patent 3** |  | x3 |  |  |
| **Writing-Specific Items** | | | | |
| **Spelling and Grammar** |  | x2 |  |  |
| **Formatting and Citations** |  | x1 |  |  |
| **Figures and Graphs** |  | x2 |  |  |
| **Technical Writing Style** |  | x3 |  |  |
| **Total Score** |  | | |  |

5: Excellent 4: Good 3: Acceptable 2: Poor 1: Very Poor 0: Not attempted

Comments:

1.0 Regulatory Analysis

1.1 Federal Communications Commission (FCC)

The most important regulatory certification our project will require is from the Federal Communications Commission (FCC), since our device includes a bluetooth and GSM radio. The FCC has regulations to limit potentially dangerous interference caused by radio communications, where products that are most likely to cause interference are more heavily regulated and products that are least likely to cause interference are less heavily regulated.[1]  Our bluetooth and GSM modules are both FCC certified, therefore our device can be classified as a Class B digital device and unintentional radiator.

Class B devices have stricter standards than Class A devices since they are consumer devices that are more likely to be located near other electronic devices. The regulations for Class B devices specify that a product must protect against interference caused to a receiver around ten meters away.[1] With a Class B digital device, Track-On-Track will require the FCC certification process.[4]

The first step of the certification process is to locate and send our device to a Telecommunications Certification Body (TCB), where radio frequency emissions will be measured. Once tests conclude the device complies with FCC standards, an FCC ID is assigned to the device. This ID must be permanently marked on the device or on a tag that is permanently attached to the device.[1]

**1.2 Conformité Européenne (CE)**

The CE marking will allow us to market and sell our product with the confines of the European Economic Area.[2] The CE marking is designed to have a much broader scope than FCC regulation, covering not only electronic devices, but also covering almost every category of products sold to consumers. Specifically, however, the types of regulations for electromagnetic devices set down by the CE are similar to those set down by the FCC, with some minor changes in scope between the two. What this means is that most labs which are equipped to test for FCC regulations are also set up to test for CE regulations, and because of this we will be able to have the device tested for compliance under both standards at the same time.[3]

While the device itself would have to be tested upon completion, the main components that have to be tested are the Bluetooth module and the cell modem. Both these devices were tested by their manufacturers and have been cleared for CE regulations. Therefore, unless any other part of the device is producing electromagnetic interference, which shouldn’t be the case, the device should have no problem passing CE standards.

**1.3 Underwriters Laboratory (UL)**

Gaining UL certification will allow our product to be trusted as safe for consumers. With a lithium-ion battery included in our product, it is important that we gain certification that the battery is safe in all aspects including charging, storing, and transportation in consumer’s luggage and bags. UL is the world’s leader in battery safety testing with its certification recognized in the global market and they conduct multiple tests that cover all aspects of battery safety.[5]

In order for UL to conduct tests, several copies of the design under test must be sent to their labs, as many of them will be destroyed in the testing process. If the device fails UL testing, they will respond with the specific requirements it did not meet. After that, the product can be modified and submitted again for testing.[6]

2.0 Legal Liability Analysis

2.1 Analysis of U.S. Patent US9439164B2[7]

**Filing Date:** March 27, 2014

**Abstract:**

This patent covers a GSM device that is placed in checked luggage that processes and shares location data of the luggage. A mobile device is to be used in conjunction with the GSM device to alert the consumer when the luggage has arrived at the destination airport. If the GSM device does not detect it has arrived at the airport on time, it sends its location once landing at an airport to the consumer and airline.

**Potential Infringements:**

1. A system for determining the location of a piece of luggage, comprising of a GSM device attached to the luggage to be tracked, a host platform communicates with the GSM device, and a mobile device communicates with the host platform.
2. The mobile device is a cellular telephone.

This patent for TrakDot, a device that closely resembles our product, includes two claims that our product has a very high chance of infringing. Both our device and the patent’s claimed device include a system that utilizes a GSM module in order to track a device’s location that is placed in luggage. Both systems also rely on a cellular telephone in order to relay the tracking device’s location. However, this patent covers only sending location data once the tracking device is at an airport, while our device can send its location whenever the mobile device sends it a request. This patent also includes a claim for auto-disabling the tracking device’s GSM module once it detects the device is traveling at a high speed which was a potential feature for our device. If implemented this may cause more trouble with claim infringements.

2.2 Analysis of U.S. Patent US20100283600A1[8]

**Filing Date:** November 11, 2010

**Abstract:**

This patent covers a system for loss prevention of small items such as wallets, keys, and purses. A wireless device and small wireless tag are used where the wireless tag is attached to items to be tracked and the wireless device uses a software application to query the wireless tag.

**Potential Infringements:**

1. A system for monitoring the distance between a mobile device and a tracking device that consists of a tracking device utilizing an RF radio, programmable logic, and battery where signal strength is measured periodically and filtered with an algorithm to reduce inaccuracies.

The other claims of this patent heavily cover the algorithm for determining the distance from the tracking device to the mobile device that appear much more sophisticated than our device’s feature to give a relative distance based on Bluetooth signal strength. However, our device will similarly use an RF signal’s strength the estimate if a mobile device is moving closer or farther away from the tracking device. The claim our product potentially infringes describes a very similar process to how our device gives a location using Bluetooth strength. By using a broad claim of RF radio, this patent covers many different possible ways we could track a device when in close proximity to a mobile device. This may make it difficult to get by the potential infringement.

2.3 Analysis of U.S Patent US20140073262A1[9]

**Filing Date:** March 13, 2014

**Abstract:**This patent covers systems and methods to do loss prevention, discovery and tracking of personal items. The systems include a device that contains a microprocessor and communicates with user’s smart device wirelessly. It also covers the method to monitor the proximity of the device to the user by measuring the signal strength of communication. When the device is not within a certain proximity, an alert is produced.

**Potential Infringements:**

1. A device that contains a microprocessor system and communicates with a smart device wirelessly.
2. A system that checks the proximity of device using the signal strength of communication.

This patent states a system that is very similar to our project since it has the same purpose as our project and the system also communicates wirelessly. It similarly uses the signal strength to determine the proximity of device which is the same method we use for our project’s bluetooth mode. However, different from this patent’s system is that our projects does not produce an alert when the device is out of a certain range from the user. Instead, our project uses the signal strength to help find the device by making sound.

3.0 Sources Cited:

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