Legal Analysis

Year: __2019_ **Semester:** ___Spring__ **Team:** ___2__ **Project:** The Guard DAWG System
Creation Date: ___3/15/19___ **Last Modified:** March 3, 2015
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1.0 Regulatory Analysis

The Guard DAWG system is intending to target commercial and residential homes in the U.S., Canada, and Europe, and as such will have to have certifications from the FCC, UL and ROHS.

1.1 FCC Certification

The Federal Communications Commision (FCC) is responsible for the management of radio and broadcast pollution and as such requires all U.S. products to be certified "prior to importation or marketing"[2] . The FCC enforces regulations on "electrical and electronic products that may produce radio frequency pollution"[1]. As both our microcontroller and Raspberry Pi operate at above a 9 kHz frequency, the FCC would consider our product as an 'Unintentional Radiator' and would need to be certified. The Guard DAWG system also is targeting commercial and residential homes and as such would be considered a Class B digital device, meaning it will have more stringent radio pollution limits. Our produce will have to undergo an "equipment authorization procedure" which involves several steps including Supplier's Declaration of Conformity (SDoC), certification, testing and approval. In order to receive certification, our product would have to be sent to an an FCC-recognized accredited testing laboratory to be tested. We would have to provide documentation and to make sure we comply with FCC rules per the SDoC. Additionally we need to provide labels and a user manual and make sure we adhere to FCC importation requirements. If at any point we change our product after bringing the product to market, we would need additional approval which might require additional testing.

1.2 RoHS Compliance

The Restriction of Hazardous Substances Directive (RoHS) restricts usage of hazardous materials commonly found in electrical and electronic equipment. In order to bring the Guard DAWG System to market in several countries in the European Union, our product must comply to these regulations. Our product would most likely fall under a category 4 (consumer electronics) or category 9 (Control or monitoring equipment). Products are tested for compliance by using an XRF analyzer which can be rented, but do not require being sent to an accredited lab. Instead, RoHS compliance is a "self-declaration" and products will be tested independently by each Member State of the EU. We would need to gather material lists for our components from our suppliers to make sure the product is compliant. It is important to our team that our product is environmentally friendly, and although it means incurring costs for testing equipment, we believe it is the right thing to do.

1.3 CE Marking

CE (*Conformite Europeene*) Marking is required on a products labeling in order to be bought or sold amongst the 28 member states of the European Union. The marking indicates that a product conforms to essential requirements relevant to European health, safety, and environmental legislation. Our system would have to be tested against the Electromagnetic Compatibility (EMC) directive to ensure that it "does not generate, or is not affected by, electromagnetic disturbance"[]. Testing for compliance can be done at the same time as the FCC testing as long as the lab is globally accredited. Once this is tested, we need to establish an authorized representative in the EU, prepare a declaration of conformity, register the product to receive a certification of registration. After those steps, we then can affix the CE marking onto our product and provide documentation in the packaging as to what directives our product conforms to.

1.4 Bluetooth Qualification Process

The Bluetooth Special Interest Group (SIG) is the standards organization that helps companies ensure Bluetooth products comply with the Bluetooth Patent and Copyright License Agreement and the Bluetooth Trademark License Agreement. As our system selling another company's bluetooth product we do not need to qualify the Guard DAWG system.

2.0 Legal Liability Analysis

2.1 Analysis of Patent 1, US Patent Application US 4360801 A
Patent Title: Home Security and Garage Door Operator System
Patent Holder: Stanley Works
Patent Filing Date: November 23th, 1982

Stanley Works filed a patent for a security system for a garage door that used a variety of sensors to unlock the garage if necessary. His patent used a sensors for detecting toxic gas and identifying windows that were closed. The status of these sensors are monitored by a central control module that responds to inputs and actuates the garage door when required. The process of closing and arming the system used a two button transmitter. The patent also includes a maximum run timer and motor overload protection for motor control circuitry.

The Guard DAWG system is similar in that it is a home security system relying on inputs from sensors and a user. However, the primary purpose of our system is solely about locking and unlocking a door and not about detecting harmful gas, which is one of the main claims of the patent. Further, the process for unlocking the door is very different from the two button transmitter described in the patent. The process of actuating a garage door and a push bar is also very different and the doors provide different functions in a household. The patent mentions a timer comparator, and although our system also uses a timing comparator to accomplish more or less the same function, this is a very common use case; timers are present across many electronic systems, if not the majority. As both our system and the patent are about electronic home

security systems there are some trivial similarities, but larger differences that prevent any sort of potential infringement.

The key claims for the holder would be:

1. In an automatic garage door operating system having actuator means for controlling the position of the garage door in response to user-initiated door opening and closing signals
2. The improvement of claim 1 which further comprises a transmitter for transmitting a door actuating signal
3. The improvement of claim 1 wherein said door actuator means includes bistable logic circuitry means for controlling the positioning of the garage door depending upon the states of said bistable means
4. The improvement of claim 6 which further comprises timer means coupled between the output of said second comparator and said warning device, operative to activate said warning device at a particular repetition rate.

2.2 Analysis of Patent 2, US Patent Application US 07214949 A
Patent Title: Home Security System
Patent Holder: Robert J. Gaffigan
Patent Filing Date: May 23th, 1989

Robert J. Gaffigan holds a patent for a home security system that has multiple security zones. The patent describes these zones as having sensors to detect potential intruders into a home when the system is activated and alarmed. The system is controller by a 'main station' that is responsible for monitoring all of the zones and flashing lights in the home if an intruder is detected. User verification is handled by a radio transmitter that communicates with the main station. The main station checks if an alarm value is set before flashing lights in the house to notify the resident of an intruder.

The patent represents a rather abstract security system that, when activated, protects against intruders. Our system is used to primarily to keep unauthorized persons out of a household, whereas this patent is more about signaling that there is an intruder inside. The patent system uses wireless radio transmission whereas we use Bluetooth and Wifi for any data transfer to a main control unit. Unlike the Guard DAWG system, the patent describes a portable remote station that is intended for the homeowner to keep in his or her car. Our system has no remote notification system to indicate an intruder. The premise of a home security system is similar to our product but does not actuate and lock and is focused on intruders. There are some potential claims but nothing substantial to evoke infringement.

The key claims for the holder would be:

1. A security system for a building having at least one security zone comprising:
    a. a portable remote station
    b. a main station associated with said building
    c. said remote station comprising a transmitter which, upon actuation, transmits an interrogation radio signal

2. The invention as defined in claim 1 wherein said transmitter is a radio transmitter and said receiver is a radio receiver.
3. The invention as defined in claim 1 wherein said building includes at least one light and wherein said warning signal generating means comprises means for flashing said at least one light.

2.3 Analysis of Patent 3, US Patent Application US 6400265 B1
Patent Title: System and Method for Monitoring Security Systems by Using Video Images
Patent Holder: MicroStrategy Inc
Patent Filing Date: April 24th, 2001

MicroStrategy Inc. holds a patent for a monitoring system that relies on motion detection by comparing captured images. The patent describes a central security network that potentially notifies subscribed users with relevant information as well as potentially sounding off an alarm. It offers a an interface to view this data, for example, via the web. The patent holds claims for compressing the captured images and how they are stored on the central security system. Notifications are relayed via a mobile phone, pager, email or PDA.

The Guard DAWG system uses a camera to identify persons attempting to gain access to a residence but uses facial recognition instead of motion detection. Our system also does not notify a particular user when this detection occurs. One of the biggest claims the patent holds is the aspect that certain data is sent to a subscribed user, but our system only sends data to another part of the system for verification. The Guard DAWG system does use something similar to a central security network and has the capability, in theory, to be accessed online, though no current design has such capabilities in place. The patent also describes the system having different levels of severity associated with different events, something that our system does not use.

The key claims for the holder would be:

1. A system for automatic notification of security information to subscribed users based on user specified information wherein the security information is communicated over at least one wireless communication path from security devices
2. a security control system that receives wireless communications that include image status data associated with one or more remote image recording devices associated with a user, compares a first image with a previous image from the one or more remote image recording devices to monitor for an alarm event and automatically notifies the user associated with the remote security devices when an alarm event satisfying the user notification preferences is received from the one or more remote devices
3. An image delivery system that transmits the image that triggered an alarm event to a user device to enable the user to analyze the alarm condition.

3.0 Sources Cited:

Work Cited

[1] Bluetooth SIG, Inc. (2019). *Qualify Your Product* (Online). Available: https://www.bluetooth.com/develop-with-bluetooth/qualification-listing

[2] Bureau Veritas Consumer Products Services, Inc. (2010). *Federal Communications Committee (FCC) Frequently Asked Questions (FAQ)* (Online). Available: https://www.bureauveritas.com/wps/wcm/connect/31b53f004edb713e8d5fcd600bbc220b/FCC_Frequently_Asked_Questions_Aug10.pdf?MOD=AJPERES

[3] The Canadian Trade Commissioner Service. (2015). *Six Steps to CE Marking* (Online). Available: https://www.tradecommissioner.gc.ca/world-monde/133383.aspx?lang=eng

[4] RoHSGuide.com. (2019). *RoHS Compliance FAQ* (Online). Available: https://www.rohsguide.com/rohs-faq.htm