# Preventing Texting-while-Driving

*Reduces Distracted Driving*

The dangers of multi-tasking while driving are well known. The risks, however, will depend on the attempted tasks. For an example, texting while driving is perhaps one of the riskiest activities that may lead to car accidents. Henceforth, the problem lies with convincing people that this recent capability is indeed detrimental.

While it has been recognized that there is no such thing as multi-tasking, many people still believe that they are able to multi-task. According to Cognitive Psychologists, multi-tasking is more accurately described as a ***continuous partial attention***. Hence, with this awareness, multi-tasking is all the more dangerous when operating equipment.

Before Mothers' Against Drunk Driving (MADD) launched their campaign to educate the public on the dangers of impaired driving thirty years ago, people had a similar attitude in terms of drinking and driving. They had success, but the bigger danger is now no longer attributable to alcohol but rather due to distractions while driving. Drivers distracted by texting suffer the same level of impairment as a drunk driver. This is because the human brain is consciously and subconsciously engaged on many levels when texting while driving. Unfortunately, in this case, there is nothing like a breathalyzer to detect the impairment.

MADD successfully paved the route towards road safety using education, legislation, law enforcement and substantial media support. Advocates against distracted driving have been successful by following the same path too. However, legislation and law enforcement has never truly solved the problem of distracted driving. Instead, technology may perhaps be the solution.

## *The Problem Contains it's own Solution*

Beginning in 1999, enacted legislation requires all telephone service carriers in the United States to provide unrestricted access to 911 Emergency Service. This service, in turn, will supply the carrier with the location of the caller and the callback number. Despite the resistance of carriers and endless waivers granted by the FCC, about 98% of the wireless carriers are complying with the FCC regulation to date.

Though it was not recognized initially, the compliance did bring about great benefits to the carriers - a whole new generation of revenue-generating Location Based Services. Everything from Turn-by-Turn Directions to the location of the closest ATM is made available on your mobile phone today, for a price of course. These wonderful services should be credited to the push for mobile 911 services. The FCC's mandate for mobile location triggered the booming market for GPS capability in mobile phones. It is this exact same capability that is able to reduce distracted driving by controlling the availability of texting services.

## *The Solution*

The GPS capability of a mobile device provides the latitude, longitude and velocity of the mobile device. A patent that was recently filed uses those capabilities to prevent mobile phones from sending or receiving text messages while traveling in a moving vehicle. This simple and elegant solution allows the blocking of texting (and any other capability such as calling) while driving. It in turn, doesn't require users to purchase new handsets. The solution, if implemented by carriers, is able to control the blocking of texting right here, right now, not in five or ten years' time.

From the time the FCC handed out the mandate on 911 services in mobile phones, carriers had at least five years to ensure that all their subscribers had handsets equipped with location detection capability. Now, almost all networks are able to determine the location and velocity of any mobile device registered on the network.

The "texting prevention" solution leverages the already existing capabilities of a network to determine the location

and the travelling speed of a mobile device. Consequently, it immediately stops the texting while driving function when it is discovered that the mobile device is indeed travelling too fast. To do so, carriers need only make minor software changes to implement a new feature in their network, which by law could be mandated, to potentially solve the distracted driving issue due to texting.

## *How does it work?*

The basis of this solution is that every mobile handset, laptop, smartphone, etc. is able to provide it's location or speed information when requested by the network. This is primarily used for 911 and Location Based Services. The patented solution requires the networks to request location AND speed of the mobile device upon registration and during periodical updates. If a mobile device is traveling too fast or located in the wrong location, any or all services that are above and beyond the basic requirements to remain registered as an attached device on the networks may be denied.

## *Yes, But...*

Any proposed solutions will always meet the inevitable doubts. Hence, let us review the doubts that are most obvious to a "Texting Prevention System".

### *1. What if I have to Dial/Text 911?*

Just like any 911 calls on mobile networks in today's world, emergency calls would be allowed by every attached device to be made on the network regardless of the location or speed of the mobile device. With your current mobile phone, you are still able to dial 911 even if your subscription has expired or that you are using a GSM phone without the SIM card.

### *2. What if I'm a first responder?*

Government Emergency Telecommunications System (GETS) has been around for years. In times of crisis, first

responders and government officials are given priority on the landline telephone network. It is not a scenario whereby the government dominates the entire phone system just because they are given priority in making phone calls but rather, first responders get calls through when the phone system is busy or overloaded. Non-priority users generally get a "system busy" tone if the network is overloaded and have to attempt their call again and again, until they are able to get access.

GETS is designed for landline phone. In addition, Wireless Priority Service (WPS) has been an essential part of the cellular networks since 2002. It gives priority to First Responders on the wireless networks during emergencies. Since it was designed to similar to GETS, those authorized for the usage of WPS will be given first priority to place cell phone calls when the network is busy. Rather than getting "all circuits are busy", they are queued until a wireless channel is open and then their call is completed.

The patent preventing texting also adds a capability to authorized WPS subscribers in which their restrictions to texting and/or talking while driving are overridden.

To further enhance the WPS, the solution would allow them to contact someone who is traveling at a any speed who doesn't have priority at all. Essentially, it will override restrictions imposed on drivers when necessary.

This then begs the next question - when would this be necessary? For one, it may be necessary when you are awaiting a liver transplant and your name has appeared on the list. Alternatively and less dramatically, you left your wallet at the mall and a police officer is trying to get it back to you. Legislation currently decides who may have WPS service. Legislation would likely decide and state what constitutes an emergency justifying the overriding of the wireless device usage restrictions while driving.

### *3. What if I turn off my GPS so you can't tell my speed or location?*

Unbeknown to most people, you automatically give up your right to privacy when you dial 911. This could be

found somewhere in your mobile phone contract. This system overrides your right to turn off GPS. But, it will only do so to determine your location or speed on a periodical basis. The procedure is in place for 911 and hence, that same procedure would work well for preventing texting too.

### *4. What if I stop at a rest stop, start a call, then drive off?*

Depending on the rate of the periodical updates of the handset's location and speed, you may beat the system but only for a while. In the implementation of this simple patent, you might be able to beat the system for a few minutes. Considering that the network, as how it functions today, monitors your location about every 3 minutes, you might be able to start a call when stationary and then take off at high speed. Your call, however, would be shut down when the next periodic update occurs and you are still driving. Software standards, however, would need an update. It would need to include provisions for in-call periodical checks to prevent this type of abuse.

### *5. What What if I'm a passenger on a bus or train?*

Two provisions in this system allow passengers to use their phones while on public transit or other shared travel, and yet are able to prevent the driver from benefiting from the same privilege. In regards of public transportation such as trains, the track corridors could be categorized as an approved location, despite its speed. However, anyone who has tried using a mobile device on a train knows that mobile services on high speed trains are not of high quality. In this patent, a proposed "hotspot" solution has been identified.

Mobile services, regardless of speed and location, may be provided for passengers on public transit. This is made possible through hotspots similar to those found at many coffee shops and public areas. The connection between the passengers' mobile devices and the hotspot access point could possibly be Wifi or cellular through a microcell. Indeed, the connection from the access point to the mobile wireless network could be assured of

regardless of the vehicles' speed or location. It does so by providing the hotspot uplink to the wireless network, creating a WPS-like priority. In this hotspot, some or all mobile services may be allowed. For example, you may be able to surf the web but you're not able to talk over your mobile device.

It is also possible that OnStar™ and similar service providers may offer mobile access in private vehicles to all users with the exception of the drivers. The driver may be detected through new sensors in OnStar's in-car systems. The sensors may block the drivers' ability to talk or to text, while connecting the passengers through its own network or the public wireless network. These service providers could use their new sensors to verify the status of the users. This would prevent passengers from being denied services due to their high speed of travel.

## *6. What's in it for me?*

From a public's perspective, the benefit of preventing texting while driving would be the complete termination (almost) of texting while driving. This will lead to the significant reduction of accident rates and related costs. In turn, Public Safety would be greatly enhanced on our nation's streets and highways.

This system could also provide another incentive for people to take the public transit when commuting, consequently reducing road maintenance, car emissions and at the same time, boosting ridership of public transportation.

From a carrier's viewpoint, new legislation means a new cost of doing business. Carriers will almost inevitably ask the question. "Another government mandate? 911, local number portability, wiretap and now this? What's in it for me?" This solution uses location, as well as speed, to allow or deny use of services. Although it is not obvious at first, when they scrutinize the new feature further i.e. the "location-awareness" capability of the network, some revenue opportunities can be seen:

Interestingly, the wireless carriers' goals of the 1990's of "Anytime, Anywhere" availability of services have been realized. As the accident rates increases, texting-while-driving has made it a necessity to control ***when*** you're using mobile devices, but also ***where*** you're using them has become just as important.

Jails, schools, restaurants, theaters and call centers, may ban or wish to ban the use of cell phones on their premises. The freedom of that decision should be accorded to them, in that they are able to control the services received by mobile devices on their own premises while leaving the devices attached to the network in order to send or receive emergency calls. This category of customers presents a new class of services for the mobile carriers to cash in on.

This ensures that the theatres are kept silent, and despite that, it still allows for emergency calls. What would a theatre be willing to pay for this feature? In addition, cyber-cheating would end in high schools, as would many other distractions, but emergency contacts with the pupils, would be allowed.

Carriers are always looking for the new killer app in the face of declining revenue. By designating parts of their own RF plan to include more "Wireless Friendly" zones for proprietors who wish to control talking, texting or all wireless service on their premises, a new source of revenue could be realized.

## *7. What if I just want the right to text and drive?*

Distracted driving must be reduced. As we learned from MADD's efforts in deterring drinking and driving, legislation and education can only go so far. Technology is able to take us the rest of the way.

*Ben Levitan is a pioneer in wireless communications with more than 25 years in the development of technical standards and 27 patents. For more information on this topic, please see*