



Prior Art Description for
The Jones Patent for “Notification System and Method that Informs a Party of Vehicle
Delay”
(the Jones patent)
U.S. Patent No. 7,030,781

Latest Date That Material can Qualify as Prior Art: January 18, 1999
Send prior art or other leads to priorart@eff.org

The Electronic Frontier Foundation, along with the Samuelson Law, Technology, and Public Policy Clinic at Berkeley Law, seeks prior art relating to vehicle tracking and notification systems in order to challenge the validity of a questionable patent (U.S. Patent No. 7,030,781 or the “Jones patent”). The patent’s owner has been asserting the Jones patent against cash-strapped municipalities that use tracking and notification systems in their public transportation services. ArrivalStar, a Luxembourg-based company, has targeted municipalities over the past two years. These municipalities, many facing historic budget shortfalls, typically cannot afford to engage in protracted litigation and are forced to settle the suits at the taxpayers’ expense. We are concerned about the effect these suits, and patents of questionable validity like Jones, could have on the growing movement to share open technologies among local governments.

EFF believes that at the time the Jones patent was filed – January 19, 1999 – the systems it describes were either in use or would have been obvious based on the state of existing technology. In order to successfully challenge the Jones patent on these grounds, EFF must collect documentary evidence of similar technologies, or prior art, that existed before the Jones patent’s original filing date. The following prior art description details the types of documentation that will help EFF “bust” the Jones patent and prevent its misuse by ArrivalStar.

I. General Description of the Invention

ArrivalStar claims that the Jones patent covers any system or method that: (1) monitors a vehicle as it travels along a route, (2) estimates the vehicle’s arrival time at a specific stop on that route by comparing the vehicle’s normally scheduled arrival time with the current status of the vehicle, (3) contacts a user, for example by calling the user’s telephone, before the vehicle reaches a particular stop, and (4) informs the user of the vehicle’s status relative to that stop.

For example, according to ArrivalStar, the Jones patent would extend to tracking and notification systems used by some municipalities to monitor school buses travelling along a bus route if they monitor the location of the school bus with a GPS or other sensor on the vehicle, compare the bus’ current location with the scheduled arrival time at each stop, and notify a student whether the bus is off schedule or not.

The patent is written to capture a broad range of tracking and notification systems that follow this basic model. For example, vehicle monitoring covered by the patent is not limited to GPS; monitoring could take place using other devices, such as a radio transmitter. Similarly, a broad range of communication devices could be utilized to convey the bus' status to the user; for example, a pager, phone (mobile or via landline), or email could be used to notify the student. The Jones patent would also apply to the monitoring of multiple vehicles and vehicle stops, and systems where computers run the monitoring and notification.

II. The Claims at Issue

The Jones patent has two independent claims and 12 dependent claims that add additional features to the independent claims. Half of the claims, Claims 1 and 3-8, describe a system to notify users of an arriving vehicle. The other half, Claims 2 and 9-14, describe that same system, but implemented with specific technology. The description below focuses on the more general Claim 1, but we are also interested in prior art involving the particular devices described in Claim 2, and in the examples we provide in Section III, below.

a. Claim 1

Claim 1 broadly covers a method for notifying users of a monitored vehicle's status. The method described in Claim 1 includes the following 4 steps:

- Monitoring the vehicle
- Comparing the vehicle's scheduled timing along a route to the vehicle's current status on the route
- Contacting a user's communication device before the vehicle arrives at a planned stop
- Informing the user of vehicle delay or impending arrival based on the comparison mentioned above

b. Claim 3

Claim 3 describes the same method as Claim 1, but adds that the vehicle's current location is compared to the vehicle's scheduled location in order to determine if the vehicle is on time or late.

c. Claim 4

Claim 4 describes the same method as Claim 1, but adds that the vehicle's progress along the route is compared to where the vehicle would be on that route if the vehicle were on schedule.

d. Claim 5

Claim 5 describes the same method as Claim 1, but adds that there may be multiple stops on the vehicle's route, and the vehicle's progress along the stops of the route can be taken into consideration.

e. Claim 6

Claim 6 describes the same method as Claim 1, but adds that the data collected about the vehicle's progress includes, at least, the vehicle's scheduled stop information.

f. Claim 7

Claim 7 describes the same method as Claim 1, but adds the ability to update the vehicle's scheduled stop information based on the data derived from monitoring that vehicle.

g. Claim 8

Claim 8 describes the same method as Claim 1, but adds that the information can be gathered and processed by a computer or computer system.

III. Description of the Prior Art Needed to Bust this Patent

The Jones patent is based on an early application called a "provisional" that was filed on January 19, 1999. Thus, in challenging the Jones patent, EFF needs to locate prior art that was publically available before that date (i.e., on or before January 18, 1999). Prior art must be in written format, such as a product description or manual, published patent, conference paper, printed publication, magazine article, web page, or technical paper.

In order to bust the Jones patent, we must find prior art that covers all the elements of at least the broadest claim in the patent (Claim 1) and ideally covers all of them. Technically, we need to bust every single claim in the patent in order to invalidate the entire patent; however, invalidating any claim helps narrow the patent to make it less formidable.

"Killer" prior art will describe all of the required elements of each claim put together in the way described by the patent (here, monitoring a vehicle, comparing the vehicle's current status to the vehicle's scheduled status, contacting a user on a device owned by the user, and notifying the user of the vehicle's status).

The best form of "killer" prior art will focus on the same types of examples that are described in the patent and listed in the description of Claim 1 below (e.g., a wireless device located on-board the vehicle, a computer that compares the vehicle's progress to its scheduled progress and then calls the user's telephone to notify the user of the vehicle's impending arrival). This is because the claims in the Jones patent will be sure to apply to "killer" prior art that includes these structures, no matter how narrowly the PTO

may interpret the meaning of the claims in the Jones patent. A piece of “killer” prior art, for example, might describe a bus system that uses radio frequencies that are sent to some sort of central processor, which then uses the received signals to send messages to users about bus delays or impending arrivals.

Even prior art that only partially covers a claim is useful if we can combine it with other pieces of prior art to fully cover the claim. For example, a prior publication that describes a device that monitors delivery trucks along a predetermined route and processes that information – but does not *directly* notify users on their personal communication devices – would still be helpful, because it could be combined with other prior art regarding personal notification systems.

Below is a claim-by-claim description of the types of prior art we are looking for:

a. Claim 1 (with examples of devices described in Claims 2, 3 and 4)

Prior art for Claims 1, 2, 3, and 4 should describe a product, system, or way of doing the following:

1. Monitoring travel data of a vehicle (including any scheduled stops for the vehicle).
 - Prior art could describe a wireless device located on the vehicle, such as a GPS device, phone, or radio transceiver that is used to record the vehicle’s position, but the claim is not limited to these items.
2. Comparing the vehicle’s current status (such as location) to the vehicle’s scheduled time and location for arriving at the next stop.
 - Prior art could describe a system, such as a computer, that receives signals from the vehicle-tracking device, and then calculates the position of the vehicle relative to the vehicle’s next stop.
3. Contacting a user’s communication device
 - Prior art could describe the computer contacting the user’s telephone, computer, tablet, pager, email, cell phone, etc.
4. Notifying the user of the vehicle’s estimated arrival time based on the information collected and processed
 - Prior art could describe a computer sending a text, email, automated phone message, or other type of communication.

b. Claims 5 and 11

Model prior art for Claim 5 and 11 should contain all of the elements of Claim 1, as well as:

- A route that has multiple vehicle stops and the vehicle's progress along the stops of the route is tracked.

c. Claims 6, 7 and 12, 13

Model prior art for these Claims should contain all of the elements of Claim 1, and also:

- A system that can update the vehicle's scheduled stop information based on data gathered from monitoring the vehicle.

d. Claims 8 and 14

Model prior art for Claim 8 and 14 should contain all of the elements of Claim 1, as well as:

- The use of a computer or computer system to perform the steps in Claim 1.

We are interested in prior art that could apply to any of these claims, but especially to Claim 1. We are also interested in prior art that describes particular pieces of technology being used in a similar way, such as a computer based notification system that informs people of delays, even if those delays are not directly related to vehicles.

Thank you for your help with this project.

Where to Send Information on Prior Art: priorart@eff.org