

FAQ: Frequently Asked Questions

How does GPS work?

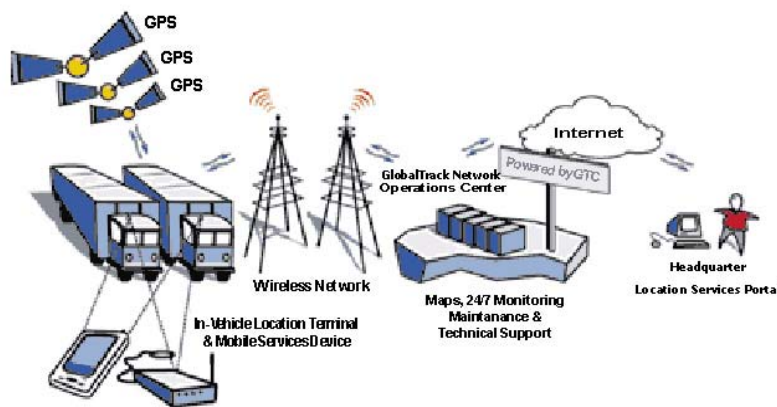
The Global Positioning System (GPS) is a group of 27 Earth-orbiting satellites (24 in operation and three extras in case one fails). When people talk about a "GPS," they usually mean a GPS receiver. The U.S. military developed and implemented this satellite network as a military navigation system, but now lets everyone use the signals.

Can I conceal the system from my drivers?

Our units are quite small and are often installed discretely.

How does GPS Vehicle Tracking work?

The unit has a wireless modem inside of it that is the same as what is inside of a cell phone. This is how the system communicates the GPS data out of the vehicle in real-time (see Wireless Networks below). Additionally, a GPS antenna is tethered to the unit with a lead wire (typically 10'-15'). The GPS antenna collects the GPS data and feeds it to the chip set in the unit, the data is fed through the wireless network (via modem) and the data is sent out to be displayed to the end user via the web.



What is the difference between GPS and Satellite Communications?

GPS (Global Positioning System) satellites should not be confused with communication satellites used for wireless communications (see wireless communications below). They are two completely separate satellite networks and applications. All of our systems use GPS satellites for location purposes, and then use various wireless networks (including satellite wireless) to communicate the location data in real-time

What is the difference between a "Real-time" or "Active" GPS system and a "Passive" GPS tracking system?

Generally, a "Real-Time" system utilizes wireless networks to allow you to receive your information and view the location of your asset in virtual, or near "real-time". Real-Time GPS Tracking is becoming the standard for companies or individuals who wish to use a GPS locator device for tracking fleet vehicles as well as tracking assets (trailer, generator, heavy equipment). Features of Active GPS AVL systems include real-time zone alerts, customer site alerts, speed alerts, locate nearest vehicle, in-vehicle navigation, two-way messaging and even mobile Internet connectivity for email, paperless forms, signature capture etc.

"Passive" systems are typically limited to only vehicle tracking applications. When a Passive unit is installed in a vehicle, the location data is stored and downloaded from the vehicle at the end of the day, or when the vehicle returns to the yard. Our passive systems have a wireless data download that allows you to capture your data via a 900mhz download when the vehicle(s) travels within a certain distance of the yard. Passive systems are recommended for companies who do not have a need to view their fleet in real-time, nor do they have requirements for real-time alert notifications for zone or speed violations, and other features that real-time systems offer.

What about GPS enable cell phones?

As companies wanting to tracking their vehicles/employees begin their search for information about GPS tracking devices, many come upon what appears to be an easy, affordable solution. To the buyer who is not familiar with how GPS systems work, GPS enabled phones appear to offer the cheapest way to start tracking your employees and your fleet. To the buyer who is uneducated with GPS equipment, GPS phones seem to be an easy way to begin reaping the benefits of GPS tracking, but as the old saying goes, "You get what you pay for". Following are the main problems with GPS phones:

1. Driver tampering
2. Dramatically reduced battery life requires phone to be constantly re-charged
3. Incomplete Reporting
4. Nextel coverage and cost

Over the years we have heard several complaints from companies who have tried using GPS phones to track their vehicles/employees. Some of our customers tried using GPS cell phones, but after a few weeks they began to realize the downsides of the phone tracking solution versus the hard-wired GPS tracking that **Progressive Technology & Innovations Inc.** offers.

If you are considering trying a GPS phone, take a moment to make some comparisons.

Tampering The first and most obvious problem with the GPS phones is that the drivers can simply turn off either the java applet running the GPS software on the phone or the phone all together. There are message boards throughout the Internet where crafty employees are spreading the knowledge on how to disable the GPS phone without being detected. Going into basements or using a metal wrap around the phone, or placing it in a tool box will make it appear as if the phone has merely "lost signal". With a GPS phone, you rely too much on the person who is responsible for carrying the phone.

The best way to ensure proper reporting is to take these factors out of the driver's hands. By using a hard-wired vehicle tracking system that is installed discreetly in the vehicle, driver interaction is taken out of the picture. The units are always on and always able to tell where a vehicle is in real time over the web.

Battery Life When the GPS tracking is added to the phone, the battery life of the phone decreases by about 50-75%. What this means is that the GPS phone will not last an entire work day without requiring at least one re-

charge. This is simply another excuse the person carrying the phone can use if he/she does not want to be tracked.

Reporting The difference in reporting is another area where the phone falls short. Although the GPS cell phones can usually report on 3-15 minute intervals like their dedicated counterparts, the fact that a GPS signal can be lost so easily, dramatically affects the Start-Stop reports it can produce. Business owners are relying on accurate reports so they can feel confident when comparing their employee time sheets against the GPS software report. Using a system that is only accurate 50% of time only leads to doubt on the employers end. When a technician insists he was at a location, but the report isn't there to back it up, the fleet manager doesn't know if he/she should trust the employee or the GPS data. Hard-wired GPS systems take this issue out of the equation. Because they are "always on" and have the best ability to maintain a GPS lock with the satellites, the reports a manager has to look at are always 99% accurate.

Coverage/Cost GPS phones require a minimum monthly Nextel voice plan of \$39.00, plus a minimum monthly data plan of \$9.99. When you add the monthly tracking services, you are easily into the \$60.00+ range on monthly services, and that is minimal use of the voice on the phone. Finally, Nextel has the weakest coverage of any wireless carrier.

In conclusion, companies who use a GPS phone for tracking vehicles/employees invariably run in to the same critical performance problems that can only be overcome by installing one of **Progressive Technology & Innovations real-time GPS systems.**

We hope to help educate the buyer in order to help you avoid the hassle of purchasing something that will be a waste of time and money. If you are interested in learning more about our GPS tracking systems please feel free to contact us at: **918-835-8642** (or) info@satellitegpscentral.com

How important is the wireless network used for real-time tracking?

How important is the wireless network used for real-time tracking?

If you are looking to purchase a 1st tier GPS tracking system, then you should be looking for a system that operates on a 1st tier digital wireless network. All of the 1st tier wireless communications companies in the U.S. market have moved to digital wireless networks. There are two types of types of digital wireless protocols that the major communication companies have utilized for the build-out of their wireless networks:

1. GSM/GPRS - Cingular, T-Mobile
2. CDMA (1xrt) - Verizon, Sprint, Alltel

There is an on-going debate as to which of these protocols is superior for passing data over wireless, but for live data feeds for devices used for GPS tracking, mobile email, and wireless forms, the "always on" technology of GPRS is clearly superior. To learn more about GSM/GPRS wireless, check out www.gsmworld.com

Avoid purchasing systems that run on other (non-digital) Wireless Networks:

Mobitext: Formerly Cingular's "pager" network, Mobitext is a 2nd tier network that Cingular recently sold to Velocita Wireless - a 2nd tier wireless provider. Cingular, along with the rest of the 1st tier wireless carriers in the U.S. market have committed to wireless digital technology. Mobitext is a low bandwidth network originally built for sending text messages for pagers (does anyone still carry a pager?). Products that run on this network are already far outdated.

Aeris & Cellemetry: These are analogue networks. Analogue cellular is out-dated, and all of the 1st tier wireless carriers in the U.S. market have moved from analogue (CDPD) to digital technology. GPS devices that

use this network are "pay as you go" type devices. One should only consider using GPS devices on these networks for applications where only a few location records per day are required, and the hardware is in the 200.00 - 300.00 per unit price range (throw-away).

GPS devices that use these networks should never be considered for fleet management applications due to the fact that reporting vehicle activity for a sound fleet management system requires between 1000-3000 records generated per month. The cost of this many records on these networks would be far above the flat fee you would pay with a superior, digital GSM/GPRS device like our Locator.

There are several of our "competitors" that are trying to sell real-time GPS tracking systems that use these analogue wireless networks.

Why do I want to do business with Progressive Technology & Innovations Inc.?

"Our mission is to listen to our customer's needs, educate our customer on GPS tracking technology and to provide our customers with the most reliable, cost effective GPS tracking systems available based on our customer's needs and budget. Then, provide our customers the best customer service possible".

"If our prospective customer is truly educated on the technology that makes up a GPS tracking system, then they will find our products and pricing to be the best value for their investment"

How does it work?

A common misconception among most people is how GPS works. GPS (Global Positioning System) satellites should not be confused with communication satellites used for wireless communications. They are two completely separate satellite networks and applications. All of our systems use GPS satellites for location purposes. Our real-time systems then use various wireless networks (including satellite wireless) to communicate the location data so our customers can locate the vehicles/assets in real-time.

Basic Operation

The unit has a wireless modem inside of it that is the same as what is inside of a cell phone. This is how the system communicates the GPS data out of the vehicle in real-time (see Wireless Networks below). Additionally, a GPS antenna is tethered to the unit with a lead wire (typically 10'-15'). The GPS antenna collects the GPS data and feeds it to the chip set in the unit, the data is fed through the wireless network (via modem) and the data is sent out to be displayed to the end user via the web.

Installation

Our systems are typically very simple to install, and in fact, 90% of our customer install themselves. Simply hook up a ground, and power wire, mount the GPS antenna and the system is ready to go.

Of course we have a network of installation specialists in every part of the U.S should you decide to use a professional.

What to look for in a real-time GPS tracking system?

There is more than meets the eye regarding the technology that makes up a GPS tracking system. Most companies who are shopping for a GPS tracking system are not familiar with the underlying technology that is the key to the performance of the system. We have several customers who bought systems from our "competitors" based on price alone, and ended up having to scrap the system for various reasons.

When implementing technology into your company, it is important to remember this truism:

"There is a price to purchase, and a cost to own, and if you purchase the wrong product, the cost to own will exceed the purchase price several times over".

When shopping for a real-time GPS tracking system, there are five (5) components that need to be carefully examined:

1. Purchase from a reputable vendor. Examine the company you elect to purchase from.
2. View a demonstration before purchasing. Examine the Web-based (or hosted) software that the end-user will be running to track and report on vehicle/asset activity
3. Wireless Network - Go digital! Examine the wireless network the system utilizes to transmit the data out of the vehicle (Real-time systems).
4. Hardware Component - Examine the hardware component you are purchasing (does it run on digital wireless networks?).
5. Unlimited Use - for a flat monthly fee. Examine the Polling rate and Monthly Billing Fees (Real-time systems)

Examine the Company you are considering as your vendor.

The Internet has allowed several "fly-by-night" GPS vendors to enter the market, and many companies that are seeking to install a quality system do not take the time to examine the company from whom they are considering purchasing. Many GPS vendors selling product over the Internet are barely educated on the product they are selling, and many are selling out-dated systems that operate on out-dated wireless networks. Take the time learn about your vendor.

Always check references and examine the companies who are currently using the products and services that you are considering.

Wireless Networks - GO DIGITAL!!!

For Real-time GPS tracking, the wireless network is used to communicate the GPS data from the vehicle/asset, so location, speed and stop times can be viewed in Real-time. Think in terms of how mobile phones work. There are two types used; (1) Digital Cellular and (2) Satellite. Obviously, digital cellular is more popular due to cost. This is the same with communicating real-time GPS data for vehicle tracking.

Wireless Networks: Cellular vs. Satellite

Due to the facts that (1) hardware is less expensive (2) monthly service fees are less expensive (3) superior network reliability; a digital cellular-based system is the best way to go for the vast majority of companies that want to use a real-time system for nearly any type of tracking.

Digital Wireless Networks

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Other (non-digital) Wireless Networks:

Mobitext: Here are the facts the Mobitext Wireless Network:

1. Mobitext is a stagnant wireless network that is not being expanded. Formerly Cingular's "pager" network, Mobitext was sold to Velocita Wireless a couple of years ago. Cingular, along with the rest of the 1st tier wireless carriers in the U.S market have committed to wireless digital technology, which Mobitext in not.
2. Mobitext is a "data only" network that is built on older, non-digital technology. It is a low bandwidth network originally built for sending text messages for pagers (does anyone still carry a pager?).
3. Coverage on the Mobitext network in the U.S market is limited to major metropolitan areas, and the real-time GPS systems that use this network are considered 2nd tier.
4. Our experience with systems that run on this network is that they are not reliable due to delays.

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GPS devices that use these networks should never be considered for fleet management applications due to the fact that reporting vehicle activity for a sound fleet management system requires between **1000-3000** records generated per month. The cost of this many records on these networks would be far above the flat fee you would pay with a superior, digital GSM/GPRS device like our Locator.

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Satellite Wireless Communications

(not to be confused with GPS satellite networks)

Due to the fact that (1) hardware is typically more expensive, (2) monthly service fees are high (and polling rate is low, cost is high; see polling rate), (3) satellite communications networks are unreliable; a satellite network for vehicle tracking is rarely recommended by us. Only when 100% coverage is an essential customer requirement will we recommend a system that uses satellite for communications.

Web-based Hosted Software

A demonstration of any GPS system should show the software and reporting capabilities. The web hosted software interface determines the mapping and reporting features that the system offers as well as the overall end user experience. The features available on the software are largely dependent on the capability of the actual hardware (see Examining Hardware). There are two main areas of functionality that should be carefully examined when reviewing the software: **(1) Mapping functionality and (2) Reporting functionality.**

Mapping Functionality

For most users of GPS tracking systems, the mapping functionality plays a significant roll in the overall satisfaction with the system. Most GPS systems use web-based mapping applications similar to Map Quest or Yahoo Maps. Our Locator model uses web-based internet mapping. The downside to Internet-based digital maps is that they require a refresh for every action such as panning or zooming. The upside is that they can be accessed from any machine with Internet connectivity.

Other mapping features to look for:

1. Geo-fencing capability - should allow unlimited number of geo-fences.
2. Customer/Landmark import capability - should allow mass import of customer/job site records for viewing on the map
3. Breadcrumb history view - should show historical travel path of vehicle

4. Find nearest vehicle function
5. User-defined zoom levels

Reporting Functionality

The web hosted software should have easy to use, detailed reporting capabilities. The reporting capability of the system is largely dependent on the hardware device used (see examining hardware), and the polling rate (see polling rate and billing).

At a minimum, the reports offered should be:

1. Vehicle Activity Report
2. Vehicle Stop Report
3. Vehicle Speed Report
4. Landmark in/out Report

Hardware

The hardware is the actual GPS unit and antennas that are mounted in the vehicle. Most GPS units contain a "mini-mother board" with a GPS chip set and a wireless modem (real-time systems). They also may include memory and software which determines the potential features of the hardware. One of the most critical pieces to the unit is the wireless modem. You should always purchase a unit that contains a wireless modem from a 1st tier manufacturer such as Motorola or Sierra Wireless. Our Locator uses a Motorola wireless modem - known as the best in the market. Additionally, the modem and hardware components will determine if the hardware has "telemetry" capability, and wireless connectivity potential.

Polling Rate & Monthly Fees

All real-time systems have a monthly fee. In most cases the monthly fee covers the hosted web tracking and reporting fees and the wireless network fees.

Monthly Fees

When it comes to tracking your vehicles for fleet management purposes, Unlimited Use is the key term when it comes to monthly fees. You want to pay a flat monthly fee for unlimited use and unlimited polling - period.

Polling Rate

The polling rate is the frequency in which the GPS unit is configured to send location reports. It determines how close to "real-time" you can view your vehicle's location, as well as the detail you receive in the reports that are generated. The lower the polling rate, the closer to real-time information is available. **From our experiences, a five (5) minute polling rate generates the right amount of detail information for 95% of the businesses who are looking to implement a real-time system. We have experimented with two (2) minute polling rate, but it simply generates too much data for the customer to sift through, and really no added value.**

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