

READY NET GO ... NEWS

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Tip of the Month

Attaching Files in Outlook Emails

When you want to insert a file in Outlook, the default directory is My Documents. For most businesses, data is located in **network drives**, not in the My Documents folder. To speed up searching and inserting files, **create a new quick link** for the network drive or folder in the left sidebar of the **Insert File dialog box**. (Icons currently included: My Recent Documents, Desktop, My Documents, My Computer, and Network Places)

This way when you want to insert a file, simply click the button rather than clicking the drop down arrow next to My Documents and scrolling down to the drive.

- 1) Open Outlook; click **New**
- 2) Click the **Insert File** button (paperclip icon). A dialog box appears
- 3) In the drop down box next to Look in: navigate to the drive or folder you want quick access to and select it so it appears in the box
- 4) Click the drop down arrow next to **Tools** (in the same dialog box)
- 5) Choose **Add to "My Places" ...**
- 6) A button with the drive letter or folder name will appear at the bottom of the list on the left.
- 7) To move this button up, right click the button and choose **Move Up**.
- 8) If there are other buttons you don't use, right click and choose **Move Down** to get them out of the way.

Navigating with GPS

GPS (Global Positioning System) is a worldwide radio-controlled navigation system that is monitored by the US Coast Guard. It consists of 24 satellites placed strategically in Earth's orbit, 5 ground control stations that track and update data on the satellites, and unlimited receivers that transmit and display coordinate information. The **basic premise of a GPS** is a system which will pinpoint a location based on three dimensional coordinates – distance (elevation), time and velocity.

Background

The concept of a GPS was first introduced by the US Department of Defense in the 1960s for military operations. The first group of satellites was launched in 1978. It was so effective and valuable that it became a law that GPS technology should be made available to the greater public. The first GPS units to hit the mainstream occurred in the mid 1980s.

Originally, there were two types of GPS. The **Precise Positioning Service (PPS)**, which was managed and used by the Department of Defense, was encoded and highly precise. There was also a **Standard Positioning Service (SPS)** that was used by the general public. It was less precise than the PPS, with accuracy within 100 meters horizontal and 156 meters vertical.

In 2000 though, an executive decree eliminated the SPS enabling all GPS units to **display results within 20 meters** (approximately 60 feet). With more advanced receivers, results can be achieved within 10 meters. Since 2000, the technology has improved drastically and the costs have decreased significantly making it a viable option for most consumers and businesses.

WWW (Websites Worth Watching)

1. www.navcen.uscg.gov/ - US Coast Guard Navigation Center. Maintains the satellites and communicates information about GPS to the general public.
2. www.garmin.com/aboutGPS/ - Popular manufacturer of GPS devices. Check out the GPS Guide for Beginners

How GPS Works

The technology behind GPS lies in the principle of triangulation. Three or four satellites are queried to pinpoint a location via radio frequencies. By calculating the distance between the satellites as well as the receiver and the satellites, you can determine your location. (See Figure 1)

In order for a receiver on Earth to report its location, it has to measure the distance between itself and at least three satellites. The calculation to determine the distance is:

Velocity x Time = Distance

where Velocity = 186,000 miles/hour
(speed of light)

Time = Pseudo Random Code (PRC)

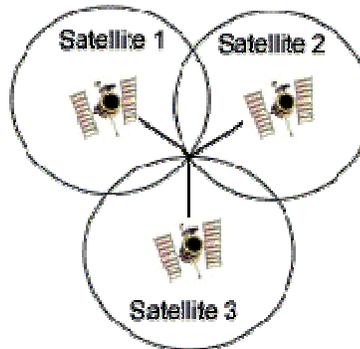


Figure 1. Two dimensional view of how GPS works. Satellite 1, 2 and 3 represent satellites in space traveling in circular orbits. Each satellite has an imaginary sphere with a radius of 11,000 miles. Looking down at the Earth, the place where the spheres intersect is the location of the receiver.

PRC is measured by simultaneously generating a random code on the satellite and a receiver (on Earth) and calculating the difference in time that it takes the satellite's code to reach the receiver. Since the satellites orbit about 12,000 miles above the Earth, there is a lag between the time that the code starts on Earth and the time it starts on the satellite. The length of delay between the two codes is the **signal travel time**. This time delay is then multiplied by the speed of light to calculate the distance between the receiver and the satellite.

A minimum of three satellites is needed to calculate the location of the receiver because GPS receivers do not have atomic clocks like the satellites have. To compensate for the errors of non-atomic clocks, the receiver's clock must reset itself to the satellite's clock until the time error disappears. Averaging the time values from at least three satellites increases the accuracy of the final distance value. By knowing the location of the satellites in space and the distance and travel time between the satellites and a receiver, you can begin navigating with GPS.

Note: To add to the systems accuracy, an additional **eighteen satellites** will be placed in orbit in the coming years.

Who Can Benefit from GPS Technology

GPS technology is a nearly universal technology. It can be used in a variety of applications by many different users including highly technical users and general consumers. Aside from military operations, which GPS was originally created for, common applications include: handheld devices, laptop computers, vehicle navigation and tracking, air and sea travel, farm equipment, sports equipment, and many others.

Businesses, in particular, can benefit from the following applications:

- 1) **Tracking vehicles** – monitor position and time of company vehicles. Know where your vehicles are at all times. Courier and delivery services as well as any company that provides on-site service can benefit greatly from GPS technology. Tracking logs provide additional records for proof of delivery.
- 2) **Safety** – for emergencies, have the ability to locate individuals in and out of their vehicles. Some GPS units will also generate diagnostic data and alert users to mechanical problems and failures.
- 3) **Alternate routes** – vital for urban environments; track traffic patterns and emergency situations to make effective use of time. If the current route is backed up, have the GPS receiver instantly offer alternate routes.
- 4) **Maps/Directions** – display maps and vocalized directions provide easy navigation for solo drivers.