



What is "Email based Live Tracking"?

"Email based Live Tracking" means, that a track is updated by sending emails containing position information to the magnalox server.

The magnalox server updates the associated magnalog and creates Live Tracking webpages and Live Tracking Google Earth files.

Position data transmissions via email can be very useful when no frequent updates are required or when traveling in remote places, where permanent internet access is not available or too expensive.

We use the expressions "Online Tracking" and "Email based Live Tracking", to distinguish two basic methods of Live Tracking possible with magnalox:

1. "Online Tracking"

The tracked person or item is more or less permanently online and sends position data without further user interaction in relatively short intervals.

Magnalox' standard application for this purpose is »**loxtrax**, an application for Windows Mobile PDAs or Smartphones. Loxtrax sends position and status data in adjustable intervals via mobile internet to the magnalox server.

Mobile internet access can be achieved by GSM, satellite phone, bluetooth, WLAN, LAN, G3, UMTS, via the docking station or any other method the operating system provides.

In most cases GPRS is used to transfer the data. GPRS fees are inexpensive (usually less than a € cent per position) and based on the amount of data transferred, not on the time it takes to transmit.

Other mobile client-applications are available on demand. »**AFTrack** is a Java application with an interface to magnalox for Symbian Smartphones, such as Nokia etc.

There are all-integrated mobile phones available, having GPS, GSM and a Windows Mobile OS packaged in a single handy, pocket-sized device. Other hardware configurations such as GPS-"mice" linked via Bluetooth to a Smartphone are also possible.

2. "Email based Tracking"

The emails containing position data are sent to the magnalox server sporadically. Multiple positions or multiple tracks can be updated in a single email.

Users can send emails from mobile phones, via SMSes, in hotels, in marinas, via internet cafes or wherever email access is available. Most modern mobile phones have email client software built in.

This allows travellers to collect data over a longer time and send them to magnalox in one go, if required.

Magnalox.net expects the emails in a certain, human readable format, which is described later in this document.

Users entitled for email live tracking are receiving an email address to where they send the data as human readable, user-friendly plain text. The emails contain a per-track password, which can be changed by the track owner online after log-in.

The emails

Magnalox scans incoming emails to predefined email accounts for keywords in their subject field. The subject field must begin with "***userid=xxxxx**", where xxxxx is the five-digit user-ID as assigned by magnalox when a user-account is registered.

If an email subject matches the criteria, magnalox scans the textbody from top to bottom for lines beginning with an ***** ("asterisk", multiply sign as available on most keypads).

When such a line is found, it expects a parameter-name followed by an = (equal sign) followed by a parameter-value. Example: ***Lat=34.25**.

Lines not beginning with an ***** are ignored and can be used as comments or for other informations, but will be lost once the email has been processed. Magnalox applies other plausibility checks such as email length, attachments etc.

Travelers can for example send emails containing both position data and other text to a person based at home, which then forwards the email to the magnalox server.

Example email: simple position update

To update the example magnalog with the ID 12345, having a update password set to 54321, the email text body must look like this:

```
*timezone=-240
*pwd=54321
*Date=27 Jun 2007 06:00:00
*lid=12345
*Lat=34.25
*Lon=-69.10
```

Explanations line by line:

1. **timezone** defines the timezone offset in minutes. Negative signs mean west to London. In this case -4 hours (=EST with daylight saving time). If omitted, the timestamp following is assumed as UTC.
2. **pwd** is the **upload**-password as specified online on the editpage, tab "Tracking". This password can be changed by the magnalog owner. You can use encrypted ("https://...") connections to access your account
3. **date** defines the timestamp of the position, in local time. Use the 24 hour format as shown.
4. **lid** is the magnalog ID-number as assigned by magnalox.net
5. **lat** is the latitude. It can be specified in decimal degrees like shown above or in degrees, minutes and seconds like ***Lat=-12° 19' 48.00"**, what equals -12.33°. Negative numbers mean positions west to Greenwich or south to the equator.
6. **lon** is the longitude, noted in the same format as lat above

This is the minimum dataset required for a position update via email. If one or more of these parameters are missing, the position and other parameters are not updated.

Optional parameters are:

1. Elevation. Specifies the elevation of the position, default = 0, unit is meters. Example line:
*Elevation=2323
2. Speed. Velocity in nautical knots. 1 knot is 1.8519984 km/h or 1.15077845382963 miles/h or 0.514444 m/s. Default = 0. Example line:
*Speed=123
3. Course. Direction in degrees. 0 = north, 90 = east, 180 = south, 270 = west. The default direction is 0 degrees. Example line:
*Course=270

Correcting wrong parameters via email

Just repeat the email with new, corrected parameters. Older values are overwritten by newer emails. This applies to all supported fields: coordinates, elevation, velocity and direction.

Make sure the log ID and the timestamp remain unchanged, because both fields form the key to a position record.

Live Tracking spectators must manually refresh their browsers to see the changes.

Deleting individual positions via email

You can delete individual positions by sending an email having the same log ID and the same timestamp, but a symbolic latitude and longitude of 190 degrees. Example:

```
*timezone=-240
*pwd=54321
*Date=27 Jun 2007 06:00:00
*lid=12345
*Lat=190
*Lon=190
```

Live Tracking spectators must manually refresh their browsers to see the changes.

Sending multiple positions in a single email

Users can email multiple position updates in a single email, for example when reaching an email-enabled computer after a longer leg or when establishing once in a while a satellite internet connection. Parameters keep their value until they are re-defined. Example:

```
*timezone=-240
*pwd=54321
*lid=14649
*Date=27 Jun 2007 06:00:00
*Lat=34.25
*Lon=-69.10
*Date=27 Jun 2007 08:00:00
*Lat=34.20
*Lon=-69.40
*Date=27 Jun 2007 10:00:00
*Lat=34.15
*Lon=-69.60
```

Timezone, the password and the log ID need to be specified only once at the beginning of the text and maintain their value for the whole message.

Updating multiple tracks in a single email

A single email can contain position updates for many tracks.

Example:

```
*timezone=-240
*lid=12345
*pwd=54321
*Date=27 Jun 2007 06:00:00
*Lat=34.25
*Lon=-69.10
*lid=12346
*pwd=54321
*Date=27 Jun 2007 06:00:00
*Lat=34.20
*Lon=-69.40
*lid=12347
*pwd=54321
*Date=27 Jun 2007 06:00:00
*Lat=34.15
*Lon=-69.60
```

This single email updates three different tracks (ID 12345, -46 and -47), what can be useful for example when a fleet is tracked.

All tracks must belong to the same magnalox user. If all tracks mentioned share the same password, a single password specification is sufficient. The order of parameters doesn't matter.

General remarks

- If frequent position updates are required (more than five in 24 hours), we recommend Online Tracking. Both tracking methods can be mixed for the same track.
- Email-based Live Tracking is not available to free magnalox account owners. Personal Online Tracking is free.
- Live Tracking magnalogs based on free accounts can be truncated by the magnalox server, depending on the load and amount of data. Magnalox offers paid accounts without these limitations.
- Combinations of Online- and Email based Live Tracking are possible. Users can send positions via email and use Online Live Tracking for a single track. Both methods can be applied with a single PDA/Smartphone.
- The delay between the reception of an email and the position update in the database can be up to ten minutes. Make also sure that all emails sent actually reach the magnalox server and aren't blocked by filters or firewalls.
- Tracks on magnalox.net can be created by Online- or Email- based Live Tracking or by file upload. Tracks originating from live tracking can be refined by uploading GPS-logfiles at any time. Many GPS devices can save high resolution track data internally. When back at home, these tracks can be transferred to the PC, from where they can be uploaded to the magnalox server. Loxtrax, the mobile client application, can provide Online Tracking and save full resolution GPS data on the PDA/Smartphone at the same time. Loxtrax can even collect Online Tracking data and bulk-upload it later, when configured so. Most modern PDAs/Smartphones can use SD cards or other media to extend their memory into gigabytes.
- The availability of third party resources such as external maps or applications can not be guaranteed by magnalox.