AFTrack 1.13 Deutsch

GPS Tracking for Symbian OS Series 60
and a Bluetooth GPS

AFTrack is the display for your GPS mouse and activates the world of hiking, biking, sailing, geocaching or more for your phone. The program handles tracking with smart and fixed logging features. It sends reports via GPRS or SMS. It receives SMS position messages and show it as a waypoint. It exports and imports waypoints and routes. And more.

Features:

Six views to the GPS data - position, goto, track summary, map, altitude profile, satellite
Tracking the current way
Export tracks (PCX, IGC with security record)
Import routes from routes or tracks (PCX)
Degree or UTM format
Edit position in selected output format

Import JPG, GIF or BMP as map
Calibrate maps with various types

Automatic calibration from different cal file formats

Waypoint group to organize the waypoints
Save current position as waypoint
GoTo a waypoint

Import waypoints (PCX, Geocache LOC, GPX)

Export waypoints (PCX)
Using extra text files for waypoint description (e.g. details of a geocache, groundspeak: long_description is supported)
Make route from a track
Reverse routes

Alarm on reached POIs
GPRS position sending
SMS position sending
SMS position receiving
Reset GPS from SIRF to NMEA
Automatic reconnection to GPS if connection lost
Filter the altitude and speed values with a Kalman filter
Logging the NMEA sentences

Note: This application requires an external Bluetooth GPS device.

Main window

The main view shows you the standard values for navigation. Additional you'll find some indicators on the bottom: satellites, connected to GPS, 2D or 3D view and logging on.

- no satellites
- 2D
- 3D
- EGNOS/WAAS

Other Views in main window

GoTo
In this view a hold position is used to show you the way to this point.

D = distance
B = bearing
S = speed
C = course
TimeToGo has no label.

The outer circle represents the course angle the inner triangle the bearing.

TTG is build from the average speed of the current track. If this is zero the current speed is used.

Routing
This view is alternate to the GoTo view. It is shown when routing is on. Some useful values are available:

Route name
Distance
Direction to the next point (big arrow)
Direction of the next point
Distance to the next point

Map
The map view shows the current track or route or both. A red sign shows the position - when running as arrow of your direction.

The map can have different meaning. The '*' key switches between position, track, route or map centered. When on a track always the position is in the center.

See this sign
position center
track center
route center
map center

Use the up and down key for scaling.
Press '#' for a change of the key meaning.
Now you can move the map. But can't go left or right to the next view.

A background map can selected from the map list - calibrate map first. When back from the list the map view and track or route are set to the map dimensions.

Trip
The statistical view. The values are

current speed
max. speed
average speed
current altitude
min. altitude
max. altitude
starting time
duration
saved track points
counted distance

Profile
This view shows the elevation profile from your active track.

max. and min. altitude
track length
duration
last altitude
after normalization the rising and falling values

Satellite
The view shows all visible satellites in its position and gives the information about the level of received signal strength and which satellites are used for the fix. The position, horizontal and vertical dilution of precision are also shown (PDOP, HDOP, VDOP). Last value is the altitude correction.

Waypoint
The waypoint information for the current point:

Short name
Little description
The bitmap with the point symbol
An indicator if a long description is available

Distance and bearing from your position

The text is stored in the AFTrack txt directory.

Menu values

Track menu
Start Track - Toggles the flag for tracking on/off. If the flag is ON the views show a log sign at the bottom.

Edit Track - Brings a dialog to edit the track name (12 characters) and the track description (60 characters).

List Track - Shows the list of the saved tracks. The selected value is also the current track for saving locations.

New Track - Inserts a new track when there is no running track. This then is the current saving track.

Delete Track - Deletes the selected track. There will always be a last track. If you want to delete all tracks to get a blank new track please use the menu 'Database' - 'Clear DB'.

Export Track - Exports the active track.

Normalize Track - The counted track values MaxAlt, MinAlt, AvgSpeed and so on are calculated from the GPS values which you normally receive every second. The track values for position and time are saved in the selected matter. The track time can be stopped. All other programs for track interpretation will get another result as this program shows. The other values are unknown for it. So you can normalize your data after a track.

Database menu

Exports the complete database or let you clear all saved dates.

GPS menu

This enables the sirf commands for power save and additional data sentences (GLL, VTG). For the power save command is no answer, so when we start the status is undefined.

'Reset GPS' brings the GPS from SIRF mode to NMEA mode.

A GPS sentence is send as SMS to the draft by pressing the menu entry. Send it from there.

If you running parallel to the log a HTTP report, please activate 'Start HTTP Send'

Keyboard
The key short cuts help to get a quick access to some features.

> Moving to next view

<
Moving to next view

/\
Map scale up, waypoint up, switch to routing

\/
Map scale down, waypoint down, switch to routing

OK
Main views: Menu for a to-do list with the current position
In lists: edit item
Calibration view: edit points
Position: edit values

1
Position view

2
GoTo view

3
Map view

4
Trip view

5
Profile view

6
Satellite status view

7
Track list

8 Waypoint list and waypoint group list

9
Route list

0
Map list

#
Map view: Toggles view between map zoom and map move or waypoint list and single waypoint view
Position view: Toggles displayed position format

*
Map view: Toggle between viewing map position, track centered or route centered
Waypoint view: gets a text if available
Calibration view: toggles between 22 points and 1 point moving around

c Delete entry or delete parameter (in HTTP settings)

Settings
Select your configuration here. Four modes are available.

GPS mode:

Log Mode - handles the different modes for logging.
Log Seconds - frequency for logging only used at log on second (values from 1 to 600 seconds, make sure you have enough space when select 1 second steps)

Altitude - select meter or feet
Speed - select knots, miles or kilometers per hour
Position Display - shows teh position on the map or calibration window

Kalman Filter - Set the filter on/off (does a smooth operation on the flipping values for altitude and speed)

Logging angle - in smart logging the angle is a feature for logging
Pause on speed less - when the speed is below the value the program register a pause (value is in 1/1000 nautical mile e.g. 50 mean 0.050 nm)
Altitude correction - the altitude correction (send in the $GPGGA sentence) is used or not

Display mode

Wpt Sort - How to present the waypoint lists
Map Display - Waypoint are shown, with or w/o label
Map Position Display - If set to 'on' the position is shown on the map
Map View - The center of the map view is defined by the position or the track points. If the system is on a track the last track point is the map center

Map Show Grid - The grid on the map display is on/off
Map Show Bearing - Offers a red line to the GoTo waypoint or the next routing point
Color of Track - Sets the beauty of the track
Color of Route - Sets the same for the route
Line Size - Sets the thickness of the track or route in points
Show Icon grid - The selection of a bitmap for the waypoint can be displayed as grid or icon list
Lock Keys - Will protect your phone (this will only work when lights are off)
Light always on - Holds the background light all the time but costs a lot of battery

power
SMS Report mode

Log Mode - Can be off, send to the draft folder of your phone, send direct to the selected number or send always with a saved track point. Be careful with this option. When you select in log mode 15 seconds the SMS could be still on your phone without sending yet.
Report Mode - Select what to send: GGA or RMC (both are only possible when GPS is connected) or a plain text version of the position

SMS number - Where to send the short message.

HTTP mode

Log Mode - Select the sending features: off, manual or direct with a tracking point (works only if a track is running)
Some parameter for the HTTP connection:

Server - the server address w/o http://

Port - used port address

File - file on the server to read the values

Id - the name of the identity parameter

Id Mode - send your IMEI for identity or define an own value

Id Value - the value for the id

Password - parameter name for a password

Password Value - the value for the password

Latitude - name of the parameter

Longitude - name of the parameter
Altitude - name of the parameter
Speed - name of the parameter
Direction - name of the parameter
Message - name of the parameter
Message value - a message text to send

The settings for the internet connect you will find in the 'access points' dialog of the general settings. The parameter for this entries you will get from you carrier.

The default entries in this menu makes a connection to www.mapserver.co.nz. To define other server leave the unused parameter blank. E.g FindU to get http://www.findu.com/cgi-bin/inputpos.cgi?...=12.3&lon=-12.3
fill only this

[Id] call
[Id Mode] Define
[Id Value] mycall
[Password] passwd
[Password Value] xyz
[Latitude] lat
[Longitude] lon

Waypoints
The waypoints are shown as a list or a single view. Each of them has a position with altitude, a bitmap for the display, an alarm distance and an alarm function.

Alarm distance and function is set on the import and is predefined on the used waypoint group. Same with the bitmap - if this it not announced in the import file. E.g. a new waypoint is added. It gets the values from its waypoint group

To add a waypoint from bearing means the start is the current position and you have to enter the distance (input depends on the selected speed mode - m, ft or nm) and the angle to run.

Another option uses the current waypoint to create a new point via the bearing and distance.

To add a waypoint from map needs a calibrated map. Please enter the calibration view (see menu in map list). Select a point with the cursor, press the enter key and select the waypoint entry.

Set the current waypoint as new position - this only works in offline GPS mode.

Waypoint Groups
Waypoint groups are selections of waypoints to organize the system. Here are placed the import and export routines for the waypoints. Please use only geodetic coordinates

(not UTM format) for import.

User defined bitmaps
The bitmaps are stored in the AFTrack data subdirectory pics. There is a text and a bmp file (icons.txt and icons.bmp). To define own pictures rename this an place a new icons.* file here. Bitmap size is 16x16 pixels for each. See sample in the pics directory.

Sample for waypoint import
To build a nice sample for the waypoint import go to these address
http://www.radarsfixes.com/P_Gps.asp (2004-11-15)
and get the file Pcx5.wpt with some radar Point of Interest

To use your radar file do this:

create a waypoint group 'radar'
edit the group and set the alarm distance (meters) and sound (no sound - no alarm)
import the file to this wpt group

Or just use the samples files (wpt or loc) with some waypoints.

To get text to your waypoint just place text file with the short name of your waypoint in the AFTrack txt directory. E.g. for a waypoint 'GC4711' use a text file named 'gc4711.txt'.

Geotoad offers to collect all informations from geocaching.com in one GPX file.
e.g.in DOS mode

c:>geotoad -f gpx -q coord "N40 45.0, E014 30.0" -y 5

gets all point inside 5 miles around the coords. The waypoints are imported and from the groundspeak:long_description tag the needed text file is saved.

All file import or export uses the directory ?:/Nokia/Others/AFTrack

Routing
A route can be generated from an old track or by using the import function - this needs a PCX file from a track or a route (*.trk or *.rte).

Please use only files in this formats:

H IDNT LATITUDE LONGITUDE DATE TIME ... W TR0000 N52.371971 E010.145681 18-SEP-04 09:24:17 ...W TR0001 N52.372024 E010.019382 18-SEP-04 09:25:50 ...W TR0002 N52.372168 E010.895003 18-SEP-04 09:27:21 ... orH LATITUDE LONGITUDE DATE TIME ... T +52.371971 +010.145681 18-SEP-04 09:24:17 ...T +52.372024 +010.019382 18-SEP-04 09:25:50 ...T +52.372168 +010.895003 18-SEP-04 09:27:21 ...
The flags points to the end of the route. When a route is started and there is a nearer point than the start point the program asks for the entry point. So it's possible to do only a part of a route.

All file import or export uses the directory ?:/Nokia/Others/AFTrack

Map support and calibration

First load a map from a place in the phone or the memory card. The file is not transfered to AFTrack. It only stores the map information. The maps can be in jpg, gif or bmp format. The GPS values are use direct so the map date has to be WGS84.

The second thing is the calibration of the map. Enter the calibration dialog over the menu, select at least two points on the map and define this points manually or use the current position for it. The map is only calibrated when the 'save' menu is selected. Don't keep the calibration point to near to each other.

A good source to solve the calibration problems is for me the TerraServer. The sat pictures helps to find some special calibration points and it coordinates.

For moving around in the map use the navigation button. Switch between 1 point or 22 point moving by pressing the * key

Notice: The bitmap should have only 8-bit color to save space.

The usable chart size belongs to the ram size of the phone (Nokia 3650 4MB Ram, 6600 8 MB). A map uses this size: a Gif file (300 KBytes file size) and 866x502 pixels uses around 900KBytes of space in the 1:1 view.

Map Source: Part of the German Topographic Maps 1:50000

Auto calibration
The bitmap file needs a calibration file in the same directory and with the same name.

Supported are

GeoTIFF World Files (tfw or jgw) only in geodetic coordinates (e.g.12.456, -45.123)
OziExplorer map files (only the first two points)

Mapshare gmi files version 1 and 2 (see here)
UI-View inf file format

TOP50 log file (see German doc)

SMS Reports
SMS reports a send to a phone number defined in the settings.

This sends the $GPGGA or $GPRMC sentence or just the position as plain text. Select this feature in the settings for SMS.

Other programs can use this as input to show your position.

This program also receive SMS report (select GGA mode) from other AFTrack users and store the incoming values as a waypoint. For the name of the waypoint the phone book entry is used - if not already there.

HTTP Reports
There are several parameters to set up a HTTP connection. Select 'manual' or 'with log' as the log mode in the HTTP Report settings to get a manual or an automatic logging. Automatic logging runs with the frequency selected as GPS log mode. Make sure that the time for the logging is greater than the GPRS answering time. For all other things use the defaults to get in first contact with this features.

Than you will need a running GPRS connection. See your manual to establish one.

To use this in an easy way just set log mode to 'Manual' and use the default values. The correct running connection will place a position report a the defined server www.mapserver.co.nz. To see you position online use this page

http://www.mapserver.co.nz/aftrack/index.phtml You will need you IMEI to get your position.

To get the information about your IMEI send *#06# to your phone.

The logic to build is:
http://server:port/file?key=value&key=value...

Log Modes
No Log
Manual
Smart for Car
Smart Boat/Bike
Smart Walking
or 1 to 600 Seconds
NMEA log

Keep in mind the logging uses a lot of space and consums also a lot of system power. The refresh of the GPS is mostly 1 second. So all active screens follow this feature and refresh all seconds. That means recount the track, the route, the map and so on.

Manual logging only logs by pressing the middle navigation button. This is also used in all other log modes except the log off mode.

Smart logging gives you the chance to have various logging times at different speeds. All values under or above the limits have the max. or min. logging time.

Car 10 km/h - 10 Minutes, 120 km/h - 1.5 MinutesBike 2 km/h - 10 Minutes, 18 km/h - 1.5 MinutesWalk 1 km/h - 10 Minutes, 5 km/h - 1.5 Minute
Or after x degree change of the corner. Select the 'log on angle' value in the GPS settings - the values between 5 and 35 (default 25).
Das NMEA log writes out all received sentence and doesn't save this values in the database. So no statistic values are available.

track samples

Log file
The log files are saved in the \Nokia\Others\AFTrack directory.

Log file format:

H SOFTWARE NAME & VERSIONI PCX5 2.08 by AFTrack 1.01H R DATUM IDX DA DF ... M G WGS 84 100 +0.000000e+00 +0.000000e+00 ...H R DATUM U LAT LON DEGH TRACK SUMMARYH Track Pnts Date Time DurationH TN Trk1 126 07-04-04 11:15:29 01:13:20 Track 1H LATITUDE LONGITUDE DATE TIME ALT T +44.1234567 +009.0000000 07-APR-04 10:15:21 27T ...
Use this format to get a chart view from your tracks at GPS Visualizer (nice SVG output) or with other programs.

In UTM notation the export is done in UTM format.

H ZONE EASTING NORTHING DATE TIME ALTT 32U 556080.2 5793195.9 31-Mrz-05 17:41:49 65
Use other options of translation with GPS Babel or other programs like this.

A newer option is the export in IGC format. This has a security line for all point lines and it can be verified with a separate tool that the log was not changed after export. Use in DOS mode:

c:>vali-aft mytrack.igc

Get the validate program here

Problems
Please notice always the bluetooth sign in top of the most windows. When the connection to the GPS is lost a message will remind you and you have to reconnect. Since version 1.01 reconnect works automatically. After 5 minutes this feature is stopped to save the battery.

When there is a problem with the phone - e.g. you have to reboot it - just start AFTrack again and select the used track. All tracks are saved in time and you can add

new positions. May be you have to normalize the track before continue the track.

When you are in an area with lower GSM signals the phone is scanning for gsm cells. This costs a lot of battery power and computing power as well. So I use an old SIMM card. It doesn't looks for cells and this will give longer tracks. But no calls.

The T-Mobile-Navigate-GPS only send RMC (Recommended Minimum Specific Data) so there is no information about the altitude and the used satellites. See www.martin-dehler.de/gps/navigate.htm for a detailed information (German).

BT-338 and may be other gps has a static navigation mode which makes problems for slower moving see this for more detail and the how to
http://www.gpspassion.com/forumsen/topic.asp?TOPIC_ID=25575
On other hardware with moving problems use the pause speed value in the settings.

Big XML files are sometimes a problem. The parsing is completely done in the phone RAM. A work around for GPX files comes from Philippe Küchler for PC and MacOS (see below). The points are bundled to smaller packages.

This program is tested only with the 3650/6600/6630 and GPS Holux GR-230/BT-338.

Please report other constellations.
Nokia N-Gage and GlobalSat BT308 Bluetooth GPS
Nokia 6600 with GPSmart - BT by Fortuna
Nokia 6600 and Teletype GPS
Siemens SX1 with Fortuna Clip-On Bluetooth GPS Maus
Nokia 6600 and T-Mobile-Navigate-Receiver
Nokia 6600 and RoyalTeck RBT-100
Siemens SX1 and Falcom Navi1 Bluetooth
Nokia 6600 and TomTom Wireless GPS Modul
Nokia 6600 and Navman 4400 GPS
Nokia 6620 and a Fortuna Clip-On Bluetooth GPS
Nokia 6600 and Micronet bluetooth GPS
Siemens SX1 and Leadtek 9537 Bluetooth GPS
Nokia 6600 and BT-GPS Leadtek 9537
Nokia 6630 and Holux 230
Panasonic X700 and XAiOX Wonde-X
Nokia 6680 and Garmin GPS 10
Nokia 6600 and Globalsat bt308
Nokia 6600 and Falcom Navi1 Bluetooth (Mobilcom Label)

Siemens SX1 and Navilock BT 338
Nokia 6260 and Royaltek RBT-1000 (XTRAC2 Version)
Nokia 6260 and Aktronix GPS
Nokia 6630 and Xaiox Wonde XL Bluetooth
Nokia 6260 and Evermore BT-R500
N-Gage QD wiht SysOnChip SIRF III GPS mouse

History:
1.13 - September 2005
- repair xml import
- smarter zoom function
- short cut for map list (0)
- '8' toggles between waypoint list and waypoint group list
- add waypoint entry from current waypoint bearing
- set current waypoint as position (offline mode)

1.12 - September 2005

- add waypoint entry from bearing
- add new waypoint from calibrated map
- send also GPRMC sentence via SMS
- send position as readable text via SMS
- use gmi file format version 2.0 for calibration
- use UI-View inf file format for calibration
- logging angle for smart logging is editable (5 to 35 degree)
- pause by speed less than (in 1/1000 nm)
- altitude correction selectable
- NMEA direct log

1.11 - June 2005

- automatic calibration with TOP50 log file
- also tfw or jgw file format with geodetic values (no tiff support)

- also OziExplorer map files
- also gmi files
- edit map name
- edit position in the selected output format

1.10 - Junu 2005

- add mapping
- add loading maps from jpg, gif or bmp file.
- calibrate the maps on board
- scale the maps until no more memory or to small
- add waypoint group setting for all members
- free logging interval
- set map view between goto and trip view
- icon in map refresh after changing

1.09 - April 2005

- add variable format on position view
(UTM, DD.DD, DD MM.MM, DD MM SS.SS)
- add position display in map view
- add export for IGC file format with security record to test the integrity of the log file

1.08 - February 2005

- save last track point
- add routing
- add making route from track
- routing import from as PCX
- the waypoint view is added
- copy the current position into the clipboard
- feature for geotoad: make text file from groundspeak:long_description
- add Italian and Dutch

1.07 - December 2004

- Waypoint import from GPX file format

1.06 - November 2004

- Waypoint import from LOC file (Geocaching XML)
- Text files for a bigger description of a waypoint e.g. Geocaching find rules

1.05 - November 2004

- German version
- Fix a problem with the Telekom Navigate GPS

1.04 - November 2004

- HTTP parameter handling (delete value on key 'c')
- Alarm also on reached POIs

1.03 - October 2004

- New menu: Waypoint
- Save position as waypoint
- List waypoint (all)
- Edit active waypoint
- Select waypoint group
- List of waypoints in the group
- Import waypoints for the group
- Export waypoints for the group
- Export all waypoints
- HTTP position sending
- SMS position sending
- SMS position receiving
- New settings menu

1.02 - September 2004

- Bugfix South-West problem

1.01 - August 2004
- Added a map view.
- The keys '1' to '6' reaches one of the six views
- A GPS sentence is send as SMS to the draft
- Reset GPS from SIRF to NMEA
- Automatic reconnection to GPS if connection lost
- Stop reconnection if not necessary
- Filter the altitude value with a Kalman filter

- Manual logging

Questi sono i link, non ne ho ancora provato uno, ditemi quale di questi funziona ed è migliore, in teoria il primo visto che ha maggior numero di fonti:

Aftrack(1).zip (**681 KB**)
AFTrack(1).zip (**783 KB**)
AFTrack(5).zip (**842 KB**)
AFTrack.zip (**774 KB**)