



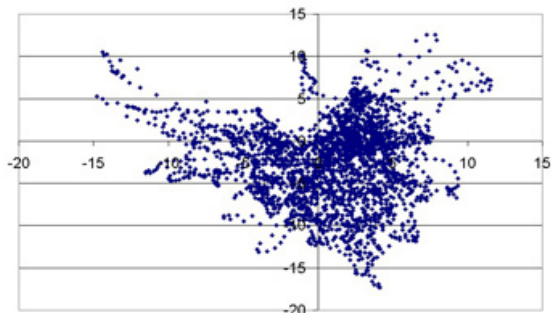
## ENAIK00N DGPS-enabler Version 2.6

### DGPS Server for Accurate GPS Positions

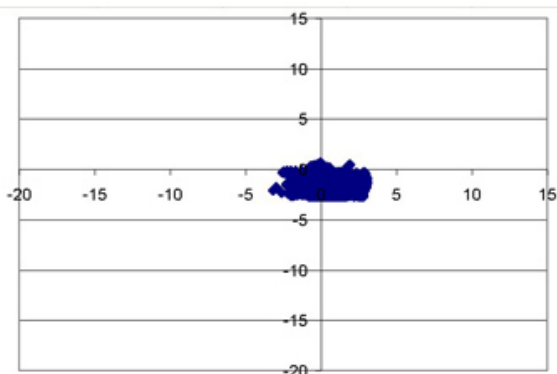
Precise GPS information improves the quality of GPS dependant reports significantly.

The ENAIK00N DGPS-enabler improves the accuracy of the GPS co-ordinates approx. 5 to 10 times at very low cost.

Typical accuracy is 2 - 4 meters (2.18 - 4.37 yd) compared with 12 - 50 meters (13 - 54 yd) with normal GPS.



GPS positions without DGPS correction



GPS positions with DGPS correction

The ENAIK00N DGPS-enabler is a service of the ENAIK00N M2M-commserver that corrects all incoming GPS positions on the basis of DGPS correctional data.

The data needed for the correction is provided in many parts of the world either thru governmental or commercial institutions.

We'll find out for you if such a source for correctional data is available in your area or if you must setup your own DGPS reference station.

### Features of the ENAIK00N DGPS-enabler web service

- The ENAIK00N DGPS-enabler web service allows receiving DGPS correctional data from any source and to store this data.
- The ENAIK00N DGPS-enabler web service corrects GPS information coming from the ENAIK00N locate units as soon as it arrives on the server and stores the corrected GPS position along with the original data in the ENAIK00N M2M-commserver database.
- All data corrected with the ENAIK00N DGPS-enabler web service can be used with all software provided by ENAIK00N like ENAIK00N fleet-control-web, ENAIK00N MP-route, ENAIK00N OSM-route etc.
- All GPS data arriving at the ENAIK00N M2M-commserver from ENAIK00N tracking devices or from mobile phones or smartphones with ENAIK00N software can be corrected by the ENAIK00N DGPS-enabler web service.

## Features of the ENAIKOON DGPS-enabler Onsite Package

The ENAIKOON DGPS-enabler onsite package can be used to setup an own DGPS reference station. Such an own reference station is required if there is no source of correctional data approx. 1,000 km around your mobile objects.

The ENAIKOON DGPS-enabler onsite package consists of the following components:

- The necessary hardware to generate correctional data for the area in question. The hardware can be used all over the world.
- A server based software that stores the correctional data in a database on a PC.

Prerequisite for the transmission of data to the ENAIKOON M2M-commserver is a reasonably priced internet connection (e.g. DSL with a flat rate).

## DGPS Background Information

Using DGPS, not one single GPS receiver is used but two. One of these receivers is the normal GPS receiver in the vehicle, the other one is a fixed mounted unit (e.g. on a building) called 'reference receiver'.

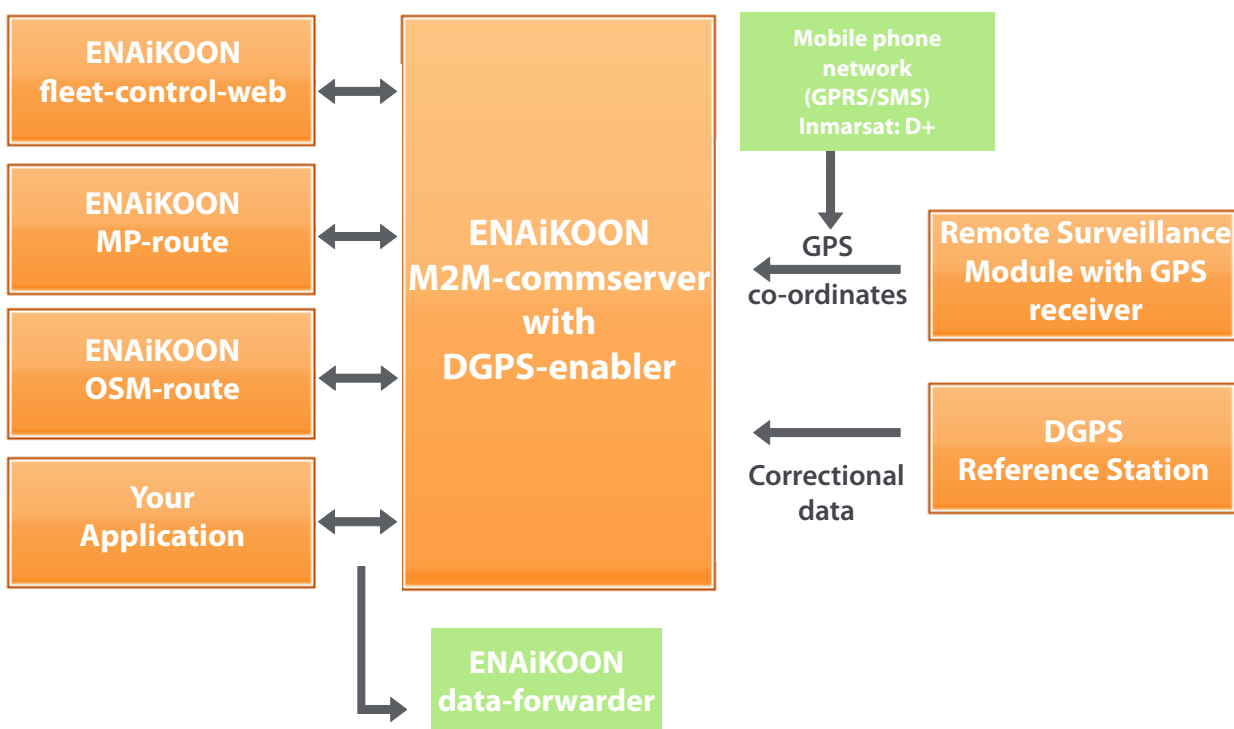
The co-ordinate where the reference receiver is mounted has to be very well measured once during the installation of the reference receiver.

If the reference receiver receives a co-ordinate from the GPS satellites (which is inaccurate), then the reference receiver compares this co-ordinate with his own co-ordinate which had been determined during its installation very exact.

Then the reference receiver calculates the vector (distance and direction) between the true position of the reference receiver and the position that was recently reported by the GPS system.

This vector is then transmitted to the server, to which the normal receiver sends its (inaccurate) co-ordinates also.

The co-ordinate that was measured by the normal GPS receiver is then corrected by adding the vector that was calculated by the reference receiver to the co-ordinate of the normal receiver.



Since the inaccuracy of GPS varies permanently, the ENAiKOOON DGPS-enabler stores a correction vector every few seconds including a time stamp. The co-ordinates coming from the ENAiKOOON locate remote control units also include a time stamp so that it is possible to correct the GPS position of a given vehicle at a given time immediately or later, when the information is processed (e.g. during the billing).

Quite often DGPS reference stations are provided by bigger institutions which are also responsible for the transmission of the correctional signal.

You can use one of these sources of the signal or you can setup your own reference station. This is inexpensive since you just need one of the ENAiKOOON locate units, a very accurate position to mount it (in most of the cases you can get the accurate position of your house from your local geo institute) and a standard PC to receive the data and to store it including the ENAiKOOON DGPS enabler software that provides access to the data.

### Products und Prices

Product	Part No.	Product Description	Price
ENAIKOOON DGPS-enabler web service	DGP-03-03	ASP fee to support one ENAiKOOON locate unit with DGPS data.	2.90 € per month per vehicle
ENAIKOOON DGPS-enabler onsite package	DGP-03-01	Complete software and hardware package for an own DGPS reference station including <ul style="list-style-type: none"> <li>✘ Full featured software license of the ENAiKOOON DGPS-enabler Onsite software</li> <li>✘ 10 objects to be supported with DGPS</li> <li>✘ 1 ENAiKOOON locate-06 module</li> <li>✘ 1 combined GPS/GSM roof antenna, cable 3 m (9.8 ft)</li> <li>✘ 1 serial cable, 3 m (9.8 ft) to connect the unit to a PC</li> <li>✘ Tower PC with 2 x 120 GB, Raid 1, Linux, serial interface for ENAiKOOON locate-06</li> </ul>	2,990 €
ENAIKOOON DGPS-enabler installation	DGP-03-02	Installation of the Onsite Package software on a Linux server with a fixed IP address and remote access. (Pre-condition for ENAiKOOON to service the system)  The hardware installation must be done by the customer	1,490 €
ENAIKOOON DGPS-enabler support	DGP-03-07	24 h remote service for the server including all software updates. The administration of the system is not included in the price and is normally carried out by the user.	29 € per month per vehicle