

CompeGPS Competition version 6 Manual

COMPE GPS

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1 Introduction

This Help will give you the instructions on how to use CompeGPS Competition; it includes an easy-to-use wizard that will help you create a competition from zero.

Previous versions of CompeGPS used the Race program to calculate competitions results. Now this version of CompeGPS does its own calculations and it will show you the results without the need of using Race; some of Race's errors have also been amended. With this in mind, the CompeGPS Team recommends that you do not use the Race connection.

We recommend that beginners in creating a competition start reading these instructions at the same time they work with the wizard and that they follow the instructions simultaneously while they read.

To solve any of your doubts on CompeGPS go to the "Competition" of the forum www.compegps.com/forum where other users and the CompeGPS support Team will give you solutions to your problem.

If you haven't been able to solve your problem in the forum, send an e-mail to support@compegps.com

2 CompeGPS Wizard

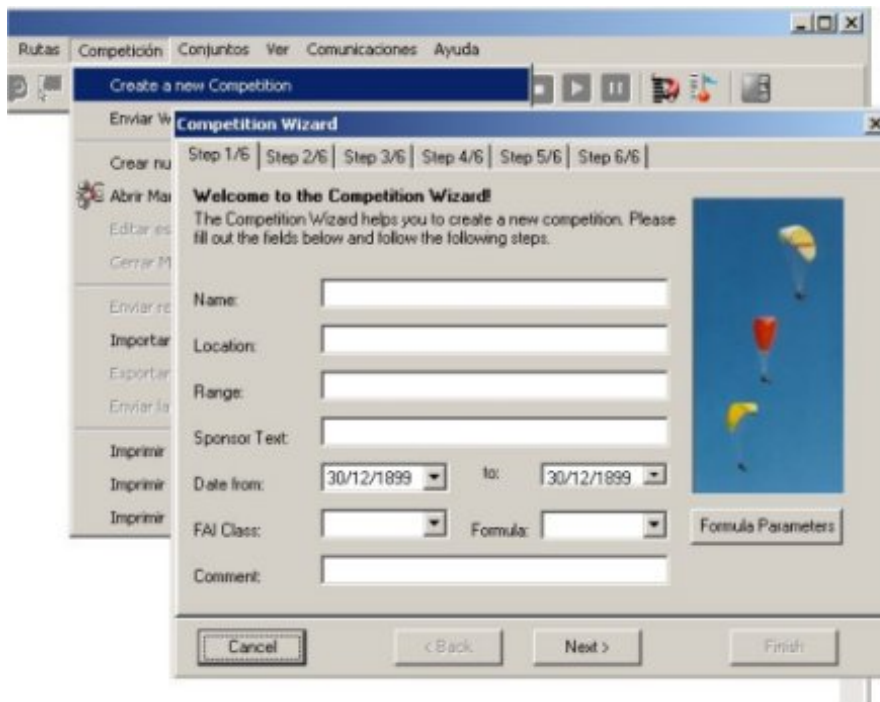
2.1 Competition wizard

To create a new competition follow the next instructions step by step:

2.1.1 How to create a new competition

When you first start up CompeGPS Competition you will be shown the initial screen with only a menu bar at the top of the screen. You have to choose the “**Competition**” option of this bar so that a new sub-menu is displayed. From this sub-menu, choose the option “**Create a new competition**”.

When you do this, the wizard will give you instructions that you will have to closely follow and that will guide you step by step to creating the data base in which all the information you will give the wizard will store.



It is very important that you follow the six steps that the wizard will guide you through. Follow them in the correct order and make sure to fill in all the fields, some of them are not necessary but others are essential. An example is the field asking for “Formula selection” in the first step of the wizard. Once you have selected the formula that will be used to calculate the competition results you have to make sure that all the parameters of the formula are correct, even though CompeGPS does assign certain default values to these parameters. In order to view the formula parameters, click on the button “Formula Parameters” and once you have modified them or just finished viewing them, click on the button “OK”.

Once you have validated the parameters, we will continue with the next step of the wizard (**Step 2**). This form will register the details of the competition Director. Although it is not compulsory to fill in this form, we recommend that you fill in as much information as possible to avoid possible problems later on during the competition.

Continue with the next step (**Step 3**). This form allows you to choose the pilot catalogue from which the necessary information will be obtained. Click on the button “Browse...” to get to the “open dialog” and to choose the data-base (catalogue). It does not matter where this folder is situated.

The next step (**Step 4**) will help you decide on the fields that you will want to fill with the pilot’s details. The fields you choose here will be the ones that will appear later on with all the pilots’ details.

If you need or want to include a field that did not appear in Step 4, you can do so in the next step (**Step 5**). You will be able to create a new field that will be added to the data-base so you can add the type of information that you want.

In the last step (**Step 6**) you will have to indicate the name with which you want to save the file. The data-base will be stored in the same folder where you have installed the CompeGPS Competition program.

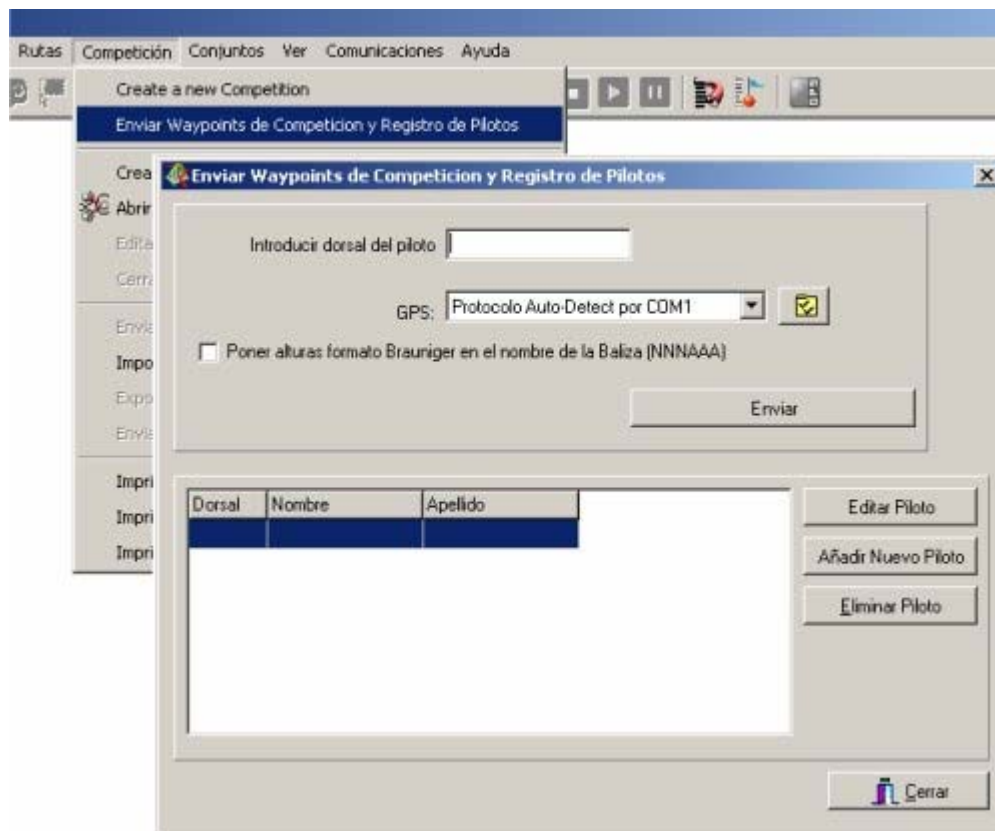
Now you have carried out all these steps you have created a data-base will all the details about the new competition. The next thing to do is to create the tasks that the competition will be composed of: Create Tasks.

The next step is add the pilots: Add pilots

2.2 Pilots' Registry

2.2.1 How to add pilots

Go to the "Competition" menu, and from there go to "Send Competition Waypoints and Pilots' Registry". You will have to indicate the name of the data base where you want to add the pilots' data. A form will appear in which you will have to write the pilot's number. If you want to introduce the pilot's data, click on the button "**Add new Pilot**". In this way you will introduce all the pilots' data; optionally at the same time you will be able to send the waypoints to the pilot's GPS. In order to do this, you will only have to indicate the GPS' protocol (use the button on the right-hand side of the protocol) and click on "**Send**".



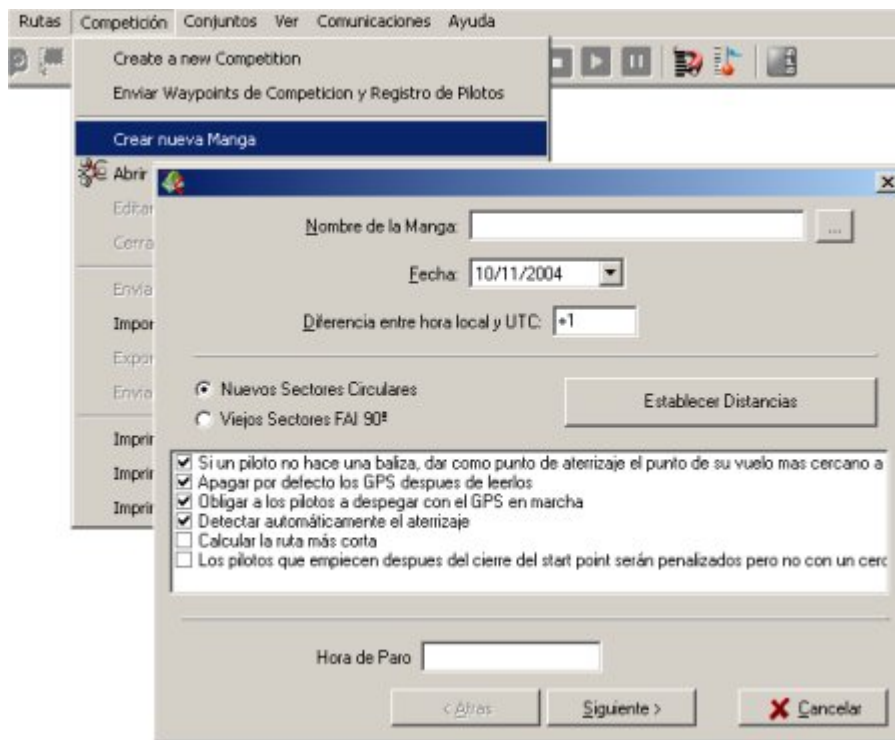
All the pilots that you introduce will be stored in the pilots list. You will be able to edit (in there are any changes) or eliminate any pilot whenever necessary.

2.3 The pilots have already decided on the task Pilots' Registry

2.3.1 Create tasks

To create a task for the competition that you have just created all you have to do is return to the same initial menu from which we worked earlier: the "**Competition**" menu. From there you must again open the sub-

menu and now choose option **“Create a new Task”**. A new wizard will appear to guide you through the creation of the new task.



The first page of the wizard consists in a form that you have to fill in with a series of parameters such as the name of the task, the date, the time difference between the local time and UTC...

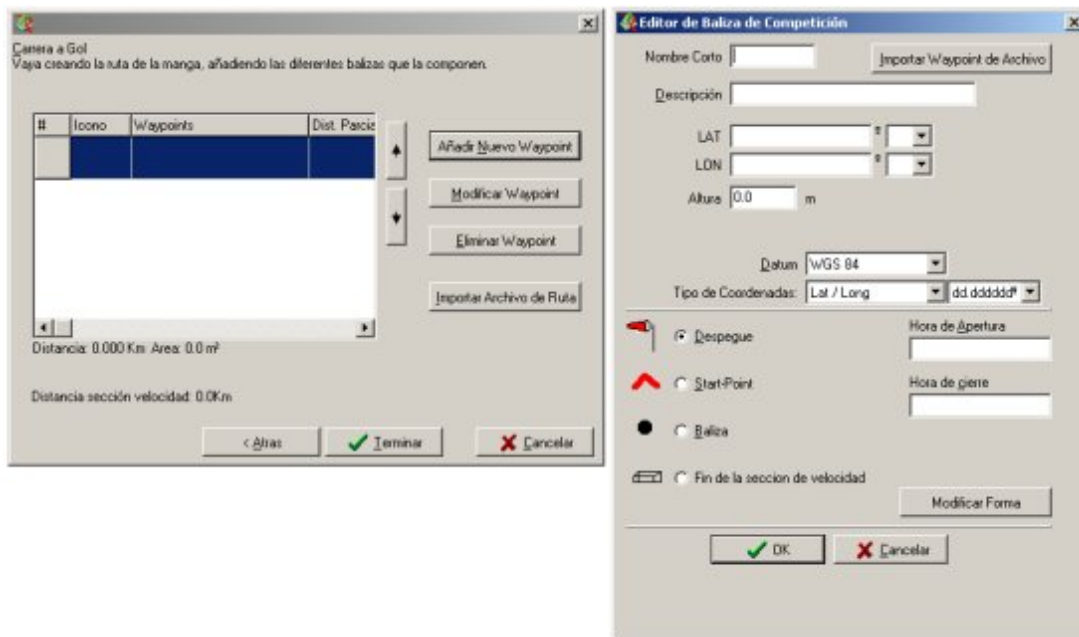
If you continue with the wizard you will move on to the next form: you will be asked what type of connection you want to use with the classification program RACE. Previously, CompeGPS calculated the competition scores but “needed” the RACE program to show them. Nowadays, CompeGPS still does all the calculations but not it also shows the results without the need of the RACE program. CompeGPS has even amended some of RACE errors. This is why the CompeGPS Team recommends that you do not use the connection with RACE.

In the next step you will decide what type of a task you want to create. You will also have to decide if the clock will start on leaving a SP (Start Point) or on take-off.

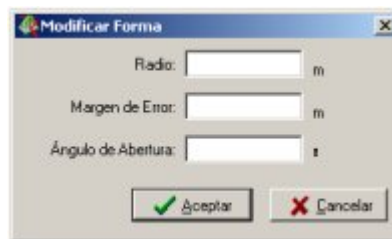
The last step will ask you to indicate which will be the waypoints that have to be flown to complete the task. This form offers four options: “Add a new Waypoint”; “Modify a Waypoint”; “Eliminate a Waypoint” and “Import a Route File”.

The “Import a Route File” option allows you to directly import a route file. You will be able to view the route’s waypoints in the waypoint list.

You can also choose add a new waypoint. To do this, click on the button **“Add a new Waypoint”**. The form that will appear will ask you to define a series of parameters associated with the waypoint, such as the name, a description, the coordinates, the datum... You will also have to choose the type of waypoint: take-off, start point, turn point or end of a speed section. The time of opening and closing will also have to be specified.



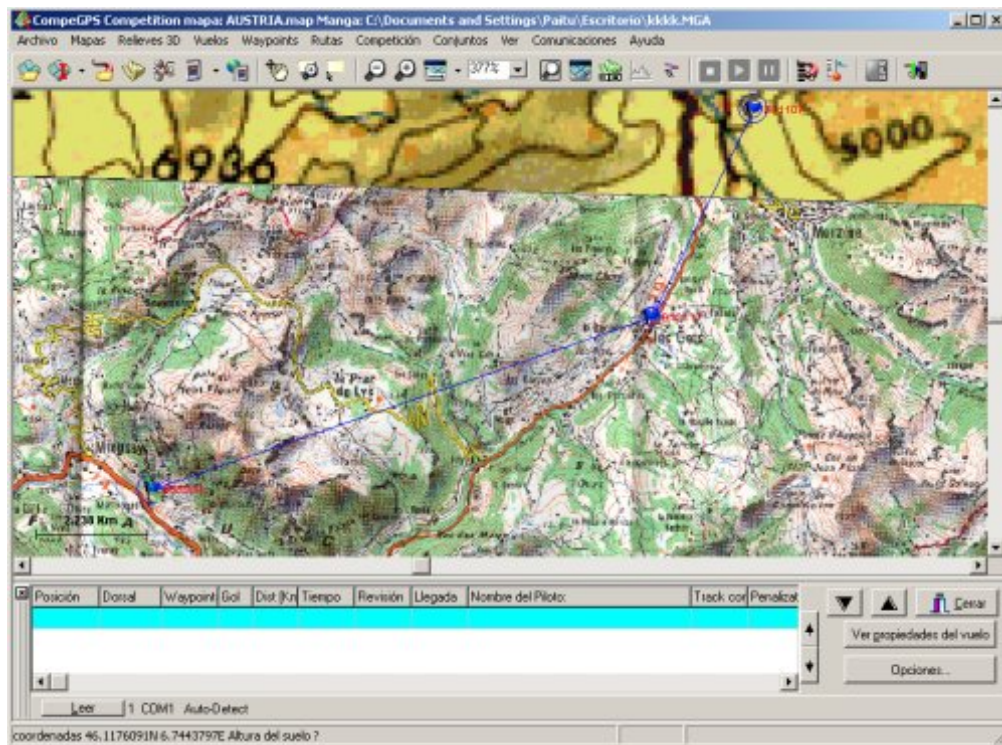
Another of the options of the “Add a new Waypoint” menu is the possibility of modifying the shape of a waypoint. Click on the button “Modify shape”. This form will appear on the screen:



This form allows you to modify the radius, the error margin and the open angle.

The other option of the “Add a new Waypoint” menu allows you to “**Import Waypoint Files**”. If you have a waypoint file you can open it with this menu option, which simplifies the process of introducing all waypoints’ details.

Once you have created the list of all the tasks’ waypoints, you can change their order, raising or lowering them with the arrows on the right-hand side of the list. When everything is just as you want it, click on the button “Finish”.



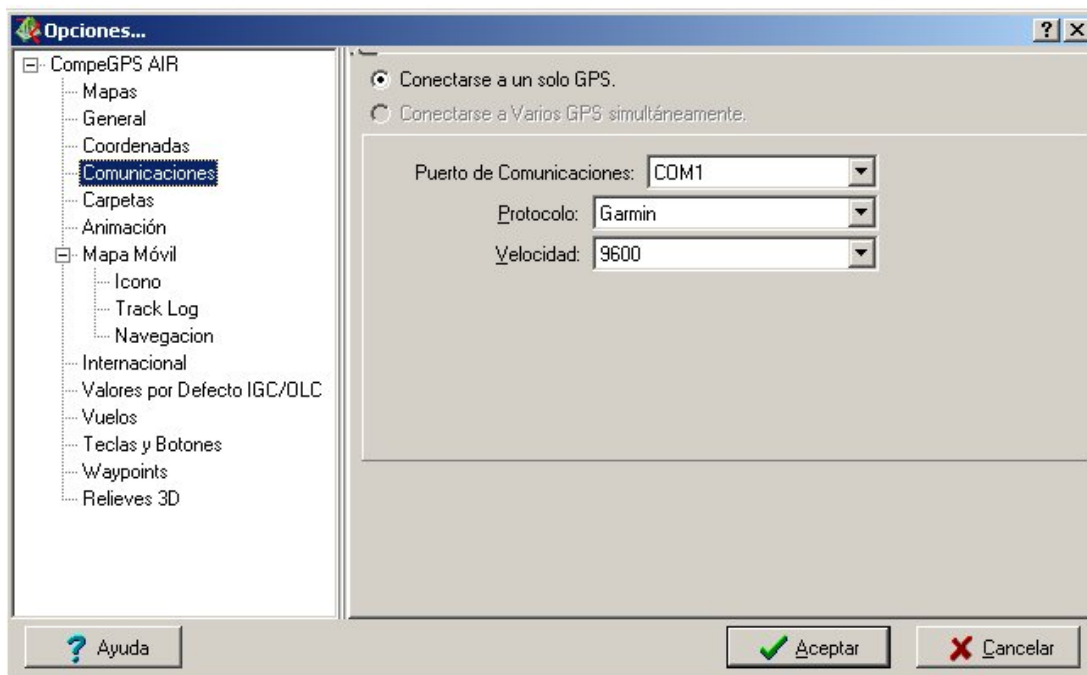
Repeat this process as many times you need to until you have created all the tasks for the competition. The next step is to introduce the competition pilots.

3 Initial set up

3.1 How to configure CompeGPS Competition

For a correct start up, the CompeGPS recommends that you work with a digital map, or if this is not possible, with a scanned bitmap, of the area where the competition will be flown. If you have to use a scanned bitmap, you will first have to calibrate it. To do this with CompeGPS Competition you have to choose in menu “**Maps**” then “**Calibrate map using a Bitmap**”.

The second step in the initial set-up is to configure CompeGPS communications. Go to the menu option “**File**”, then to “**Options**”, and then go to the page “**Communications**”.



In this window you can add different GPS models, indicating the PC serial port in which each GPS cable is connected. You can connect up to 4 GPS at the same time.

When you configure the GPS protocol, you can assign the “Auto detect” option so the program automatically checks the type of protocol used by the GPS

You have to introduce the **waypoints** in the program. If you don't know the coordinates of some of them, you can use the scanned map. (Click in the map, with the right mouse button, and click "Create waypoint here" in the popup menu). You can also drive to all of the waypoints and once there, make a 'MARK' with your GPS. Then, download the entire waypoint file to the CompeGPS program.

Once you have all the waypoint loaded onto CompeGPS, save them in a file. To do so, click on "**Waypoints / Save waypoints as...**"

3.2 How to load waypoints to the pilots' GPS

To load the Competition waypoints on to all the pilots GPS, proceed as follows:

Firstly you will have to open the waypoint file in which you stored the competition's waypoints. To do this, go to the menu option “Waypoints”, then go to “Open waypoint file”.

To avoid errors, before proceeding, make sure that the communications with the GPS are correctly configured. To check how they are, go to the menu option “Communications” and then to “Configure communications”. Check that the protocol and the port indicated are correct. Take into account that CompeGPS can handle simultaneous connections with multiple GPS at the same time. This saves time when loading waypoints into GPS and when reading tracks.

Once you have loaded the waypoints file (you will be able to see the waypoints in CompeGPS main screen) and you have checked that the GPS communications are correct, you can now send the waypoints file to the competition pilots GPS. To carry out this operation, go to the "Communications" menu, from there go to "Send waypoints to a GPS". You will see how the files are being sent to the GPS.



4 Work during the competition

4.1 Reading pilots' GPS

The task starts. Pilots must fly with their GPS always on.

At the organization site put the computer in a place where pilots can see the screen. For them, it is really fun to be able to see their flight.

When a new pilot arrives, press the **"Read"** button. In this case, CompeGPS is configured to read two GPS at the same time. The upper "Read" button reads Garmin GPS, and the lower, reads MLR GPS. This can be configured using the CompeGPS Options. (File / Options / Communications).

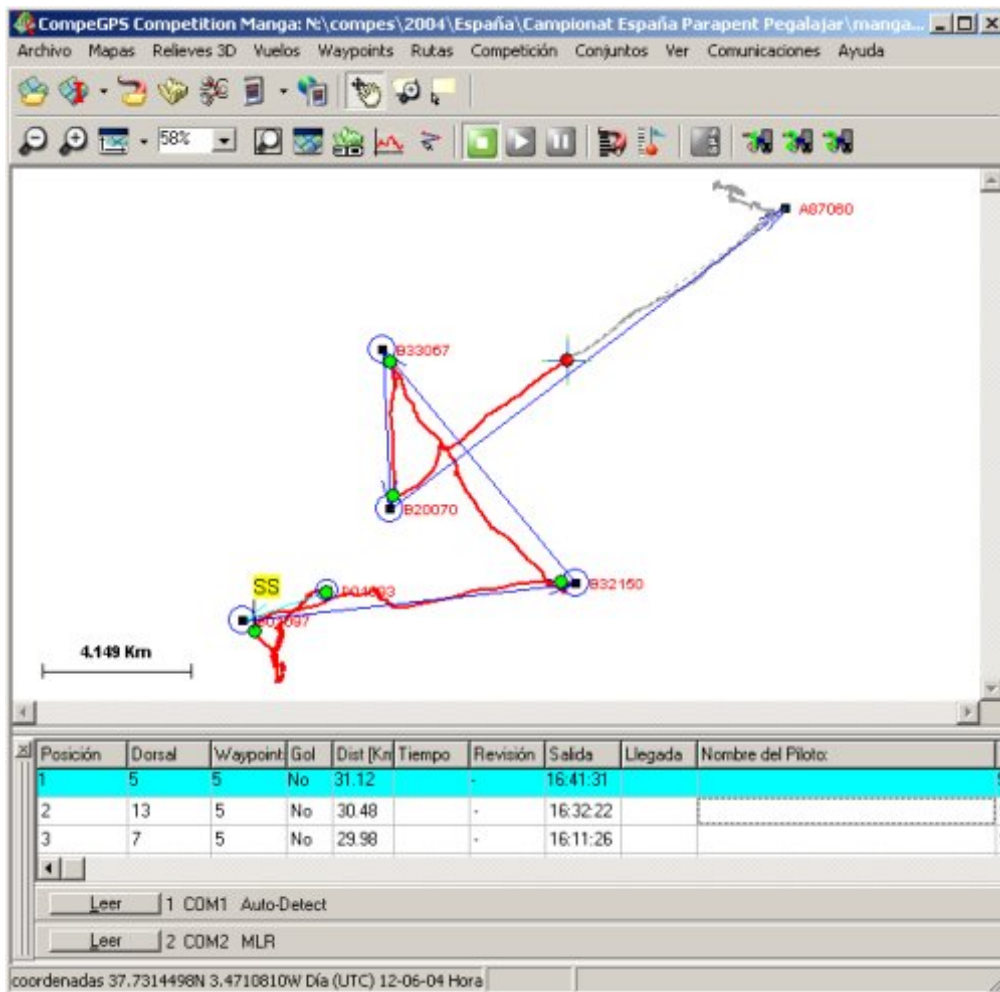
"Tying to connect with the GPS". This notice means that there is something wrong. Probably the GPS is not connected.



Once you connect the GPS, the windows change a bit: In the map, the track gets drawn, and a blue bar is displayed in the lower window:



When communication has finished you have to press **'OK'**. The Pilot's flight will be entered into the task classification. His flight will be drawn on the map and a green mark will appear on the waypoints he flew correctly.

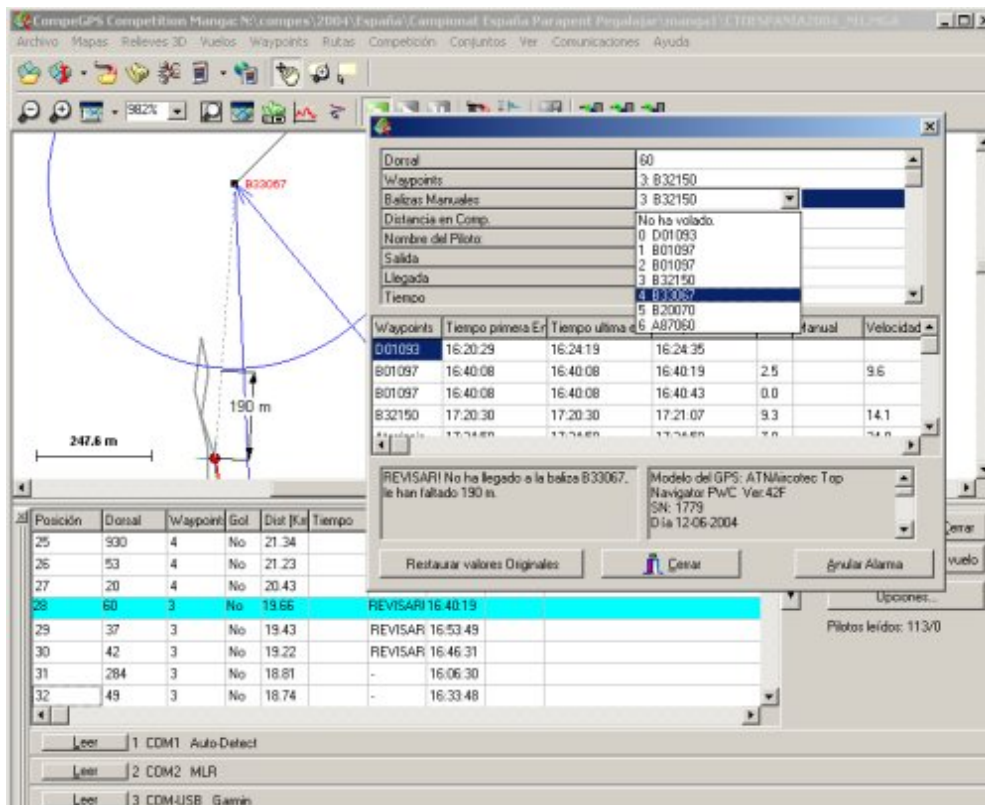


In this example, you can read from three GPS at the same time.

4.2 Final review

Pilots' flights with any type of problem, will be marked with a "**REVIEW**" comment in the classification,

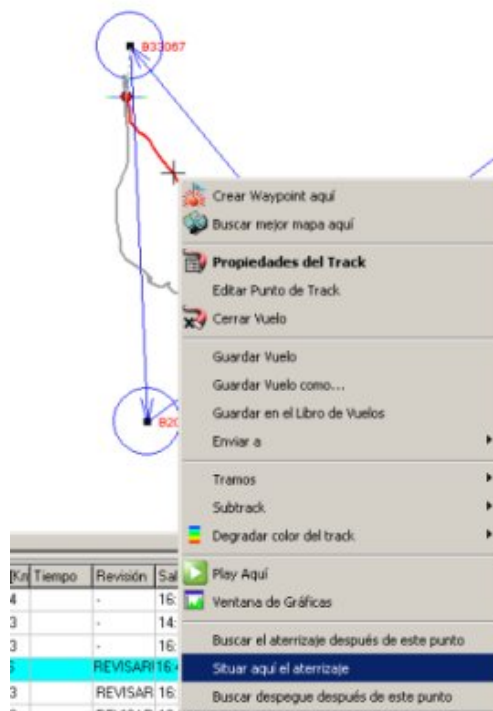
You can edit any of the pilots, it does not matter if they are marked for 'REVIEW' or not. To edit a Pilot's flight, double-click on the pilot's name in the classification list. His flight will be shown on the map and a window will be displayed with all the information of the pilot's flight.



You can modify the pilot number of reached waypoints. To do that, double-click over "**Manual Waypoints**".

You can also modify the landing point of a pilot. To do so, double-click on "**Landing Coordinates**", in this window. A new window will be displayed asking you for this pilot's landing coordinates.

Another possibility to change the landing place is to click on the map, on the place the landing place should be. A pop-up menu is displayed. Select "**Place the landing place here**".



5 End of the day work

5.1 Printing results

The next step once we have down-loaded all the task's tracks and they have been verified by the judges, is to calculate the task results and print them out. To carry out this operation, go to the "Competition" menu and then to "Print Task Result", if you want to print the results of the task you have open, or choose "Print Competition Results" if you want to print the general results of the competition up until that moment.

If you are printing the task results, a form regarding the open task will appear giving you a series of printing options.

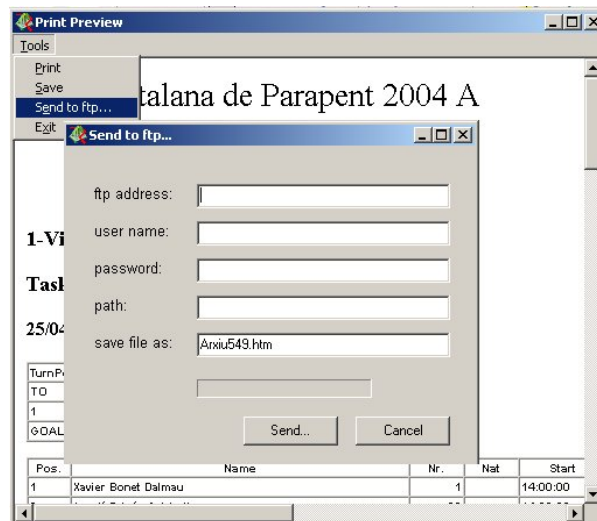
Name	Date	Type	Distance(Km)
1-Vilanova25Abril	25/04/2004	RACE	40.9
2-Olganya18MayoA	16/05/2004	RACE	56.2
2-Olganya19MayoA	15/05/2004	RACE	56.2
3-Berga26JunioA	26/06/2004	SPEEDRUN	39.5
3-Berga27JunioA	27/06/2004	RACE	56

The options offered are:

- **Filter pilots:** This option allows you to filter pilots according to different attributes such as: only view pilots with a certain nationality, sex or any particular attribute that you may have introduced when you created the competition.
- **Teams:** This part allows you to group pilots according to their teams. You will find it useful when you want to check the results of a group of pilots which fulfil a certain attribute, for example: the same nationality. The "Store best" field determines the number of pilots with the best score within the group. For example, if you want to view the three best Spanish pilots you will have to configure the following commands: "Build by" "Nation" and "Store best" "3".
- **Scoring:** This option only works if you have a filter activated, and then you will be able to choose between two choices: Calculate the scores for all the competing pilots or calculate the score for the filtered group of pilots. If, for example, you want to calculate the scores for all the feminine pilots you would have to filter according to the pilots' sex then in the "Score" field enter "Filtered group".
- **Reports:** Fill this field in with the Title that you want to appear at the top of the print out. You can also add any other comment that you want to be printed.
- **Sponsor:** Use this button to choose the image that you want to appear on the print-out.

- **Print/Preview:** This option allows you to pre-view the result on a HTML page or to print it out directly.

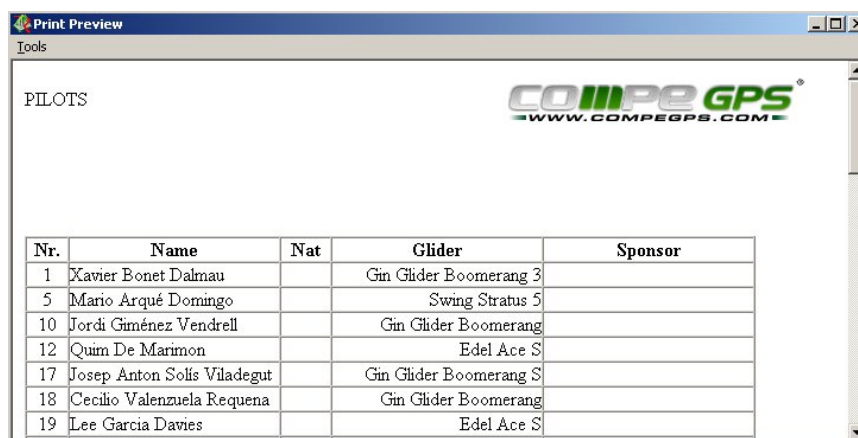
If you have chosen to pre-view the results, the new window will show you the results on a HTML page. You are offered other options: at the top of the window a tool menu appears with the following possibilities: Print, Save, Send to ftp and Exit. The "Send to ftp" will allow you to send the results directly to a ftp and then exit. You will find this a handy option if you want to publish the task results on a web site. If you choose the "Send to ftp" option the following window will appear:



Fill this form in with the ftp address, the name of the use and the password to access the ftp session. You will also have to detail the path route inside the ftp where you want to store the file. Lastly, write the name of the file, including the .htm extension.

5.2 Print the pilots list

If you want to print the list of all the participating pilots all you have to do is go to the "Competition" menu and then choose "Print Pilot List".



In this pre-view of the pilots list you will also have the possibility to Print, Save, Sent to a ftp (as explained in the previous section) and Exit.

6 Typical problems & validation

6.1 Problems with different GPS models

- **Datums:** Some GPS send the coordinates in WGS 84, and others in their programmed datum.
- **Garmin GPS**, using the 'Garmin' protocol, send the track using datum WGS 84, and in UTC time.
- **Loggers**, (such as LOG_IT) connect to the GPS using the NMEA protocol. With this protocol the coordinates are referred to in the same datum that is programmed in the pilot's GPS. It is impossible to know the map datum that the pilot used during the task. Maybe he flew with "European 1950" datum and then, before reporting, he changed his map Datum to WGS84. We recommend that the pilots always use datum WGS84. Oblige pilots with loggers to take-off and fly using this datum. CompeGPS presumes that the pilot's GPS uses the same datum CompeGPS has in its options.
- The **TOP Navigator** sends the track coordinates using its' own configured datum. This is not a problem, because it also sends the name of the Datum, so CompeGPS will calculate the correct coordinates with the correct datum.
- The **MLR** sends tracks coordinates in WGS84 (great!), but when it receives waypoints, it assumes there are in this datum. Again here we have a problem: Whenever you need to send waypoints to a MLR, first check that both the MLR and CompeGPS datums are the same. (CompeGPS will give an error if there are not the same).
- **Time:** Again the same problem: Some GPS send time in UTC (Universal Time) but others use the corresponding local time.
In this case, the worst GPS is the **TOP Navigator**. It sends the time in the local time of the GPS. CompeGPS is not able to know if this local time is the correct or not. So if you are using a Top-Navigator, you will first have to check if the local time of the TOP Navigator and of the CompeGPS are the same.
- **Magellan:** The new versions of CompeGPS can read tracks from Magellan GPS, but Magellan GPS cannot be used in competition, because old models do not store the track time and date. This means that we cannot be sure when the pilot really did fly. New models, like Magellan MAP 330, store the time of each point, but not the date, so we have exactly the same problem!.

6.1.1 GPS time versus UTC time

The GPS internally work with GPS time. This time is slightly different to UTC time. It may cause the typical 13 seconds error: [6.5 13 seconds problem](#)

6.2 Mark + Enter

In some competitions, pilots are allowed to create a **Waypoint** when they arrive at the turn-point by pressing '**Mark + Enter**'. If their tracks do not include a point within the waypoints sector, but they do have a Waypoint there, then it is considered that the waypoint has been flown correctly.

We, at the CompeGPS Team, do not think that this is a good solution. A lot of cheating can be done with this method. Once a waypoint is created in the GPS **pilots can easily modify it** before getting to the headquarters to download the flight from the GPS. That is why we do not like Mark+Enter method and that is why **CompeGPS does not work directly with Mark+Enter**.

Nevertheless, CompeGPS **will show in the screen** all the '**Mark+Enter waypoint**' that the pilots have created with the Garmin GPS model. Have a look at the figure below. In this case, the pilot has stayed very little time in the waypoint sector, but he made a Mark+Enter. There is no track point in the sector, so initially CompeGPS considered him out of the waypoint. But in the waypoint sector, you can see the pilot's waypoints, and there is one created with a Mark+Enter, called 001 '20-JUN-01 16:20' within the sector. So the competition scorer manually gave this waypoint to the pilot.



The screenshot shows the CompeGPS Competition version 6 interface. On the left, a map displays a flight track with a red dot at waypoint B33067 and a distance of 190 m. A scale bar indicates 247.6 m. On the right, a 'Waypoints' window is open, showing details for waypoint B33067, including its distance (60), name (B33067), and time (16:40:08). Below this, a table lists waypoints and their times.

Waypoints	Tiempo primera Et	Tiempo ultima	Manual	Velocidad
001093	16:20:29	16:24:19		16:24:35
B01097	16:40:08	16:40:08	16:40:19	2.5 9.6
B01097	16:40:08	16:40:08	16:40:43	0.0
B32150	17:20:30	17:20:30	17:21:07	9.3 14.1
Ataque	17:24:00	17:24:00	17:24:00	7.0 14.1

Below the waypoints table, a message states: 'REVISARI No ha llegado a la balza B33067. le han faltado 190 m.' To the right of this message, the GPS model is listed as 'ATNAscotec Top Navigator PWC Ver:42F' with SN: 1779 and D: 12-06-2004. At the bottom, a table shows flight log data:

Posición	Dorsal	Waypoint	Gol	Dist [Km]	Tiempo
25	930	4	No	21.34	
26	53	4	No	21.23	
27	20	4	No	20.43	
28	60	3	No	19.66	REVISARI 16:40:19
29	37	3	No	19.43	REVISAR 16:53:49
30	42	3	No	19.22	REVISAR 16:46:31
31	284	3	No	18.81	- 16:06:30
32	49	3	No	18.74	- 16:33:48

This screenshot shows a context menu for a track point. The menu options are:

- Crear Waypoint aquí
- Buscar mejor mapa aquí
- Propiedades del Track**
 - Editar Punto de Track
- Cerrar Vuelo
- Guardar Vuelo
- Guardar Vuelo como...
- Guardar en el Libro de Vuelos
- Enviar a
- Tramos
- Subtrack
- Degradar color del track
- Play Aquí
- Ventana de Gráficas
- Buscar el aterrizaje después de este punto
- Situar aquí el aterrizaje**
- Buscar despegue después de este punto

Below the menu, a table shows flight log data:

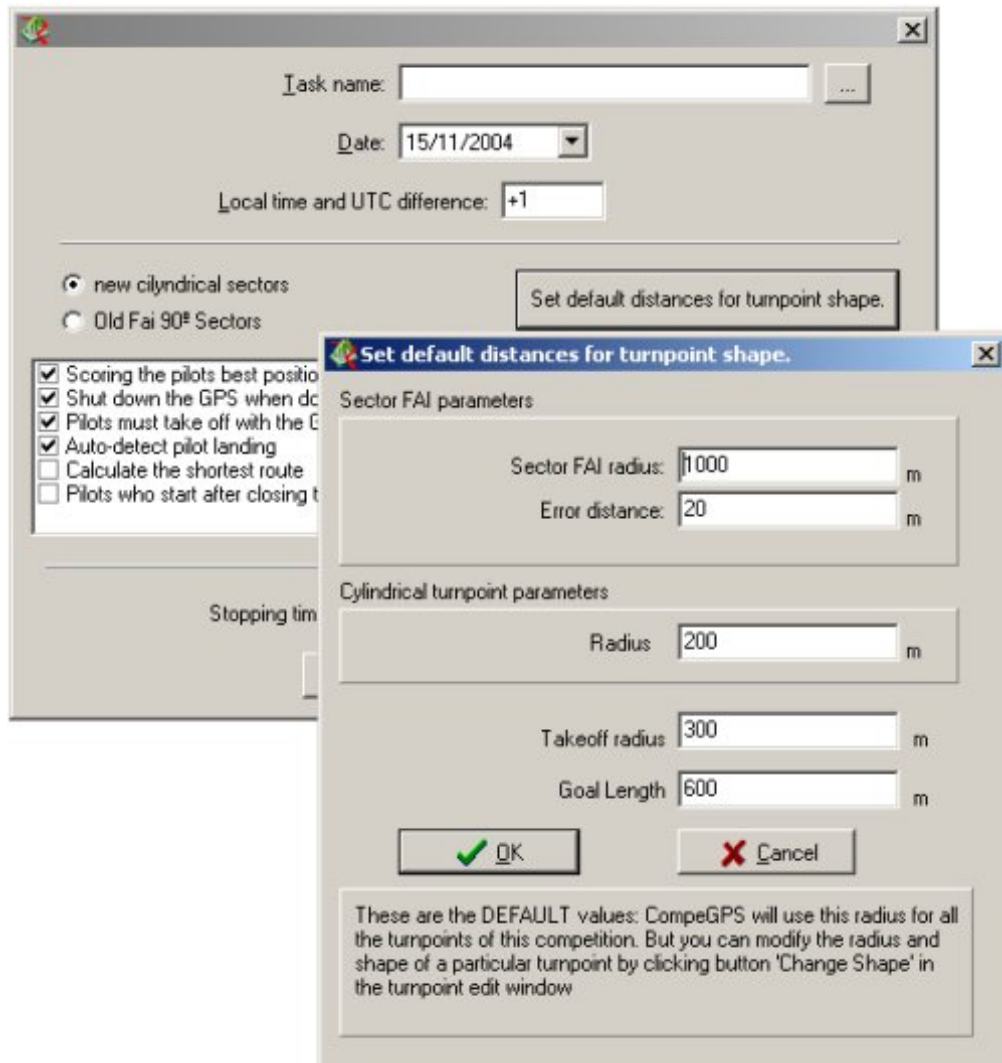
Km	Tiempo	Revisión	Sal
4	-	16:	
3	-	14:	
3	-	16:	
3	REVISARI 16:		
3	REVISAR 16:		

6.3 Modifying waypoints' radius

Waypoints can have three different type of shapes with CompeGPS:

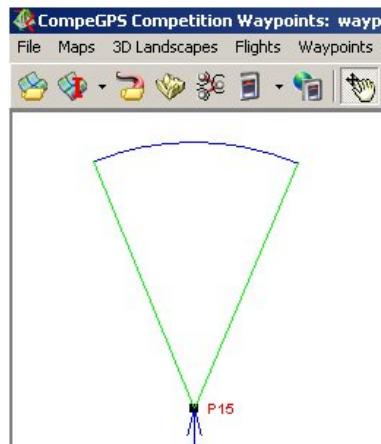
- Cylindrical.
- FAI sector.
- Other shapes similar to FAI sector, but with other angles.

To change the shape of **all** the waypoints in a task, go to the task programming window and click on the button "**Set Default distances for waypoints shape**".

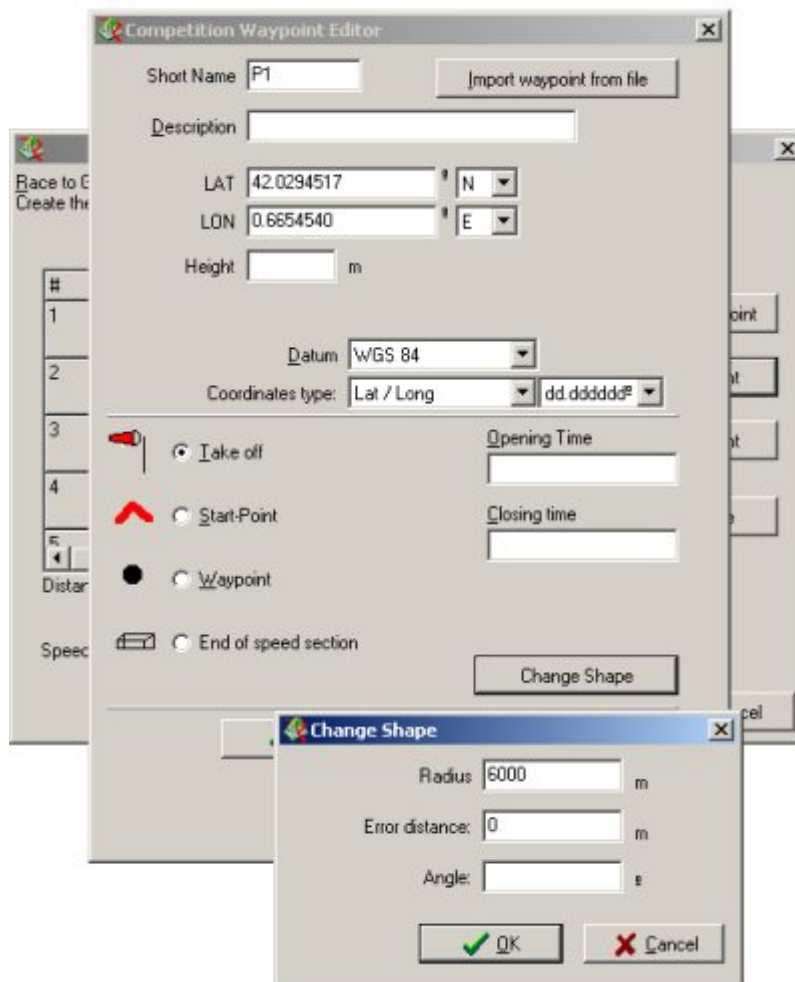


In this window, different kind of distances can be programmed.

- Sector FAI Radius: This parameter is only used in FAI sector waypoints.
- Error distance: This is an extra distance, added to FAI sector waypoints. See picture below:



To change the size of a specific waypoint, click on the button "**Change Shape**" in the Competition Waypoint Editor.



In the '**Change Shape**' window, you can modify the radius, the error distance and the angle of the waypoint. In this example of a Start-Point, the user has programmed a 6000m radius.

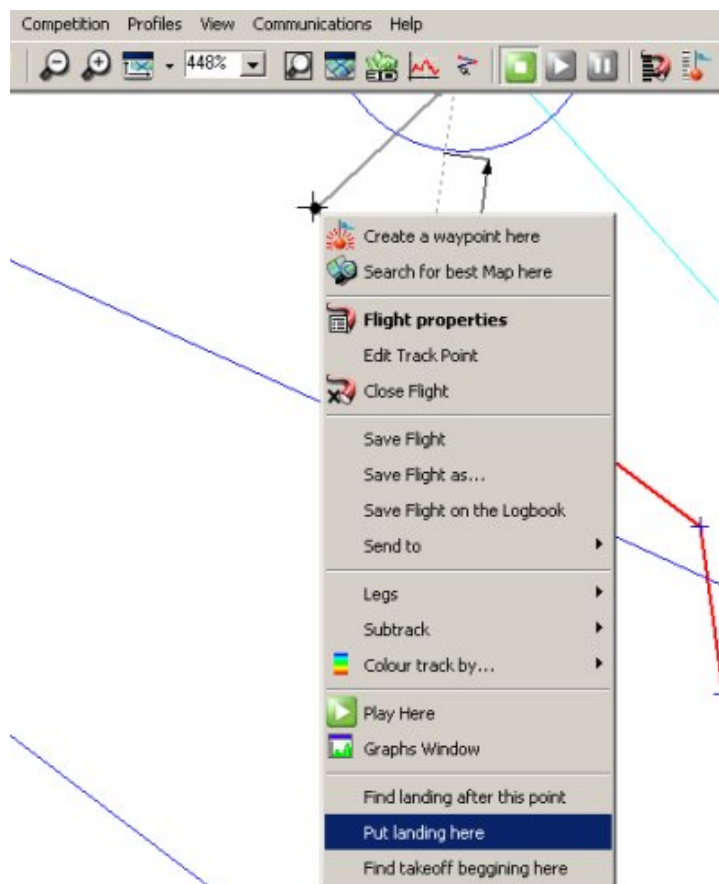
6.4 Landing calculations and discontinuous tracks

CompeGPS can calculate the landing position of the pilots, because it detects the point where the pilot has been stopped for a while.

CompeGPS will assume that a pilot has landed if he flies more than 10 Km or more than 30 minutes (1800 seconds) with the GPS stopped. You can modify these values before creating a task by editing the GPS.INI File:

```
[Compe]
Comp_Max_Dist_Stopped=10000
Comp_Max_Time_Stopped=1800
```

If a Pilot flew for more than 10 Km or 30 min with the GPS stopped, then CompeGPS will assume he landed in the last recorded point losing track details. You can manually modify this and say that he continued flying, by setting the manually setting his landing place at the point where he really landed.



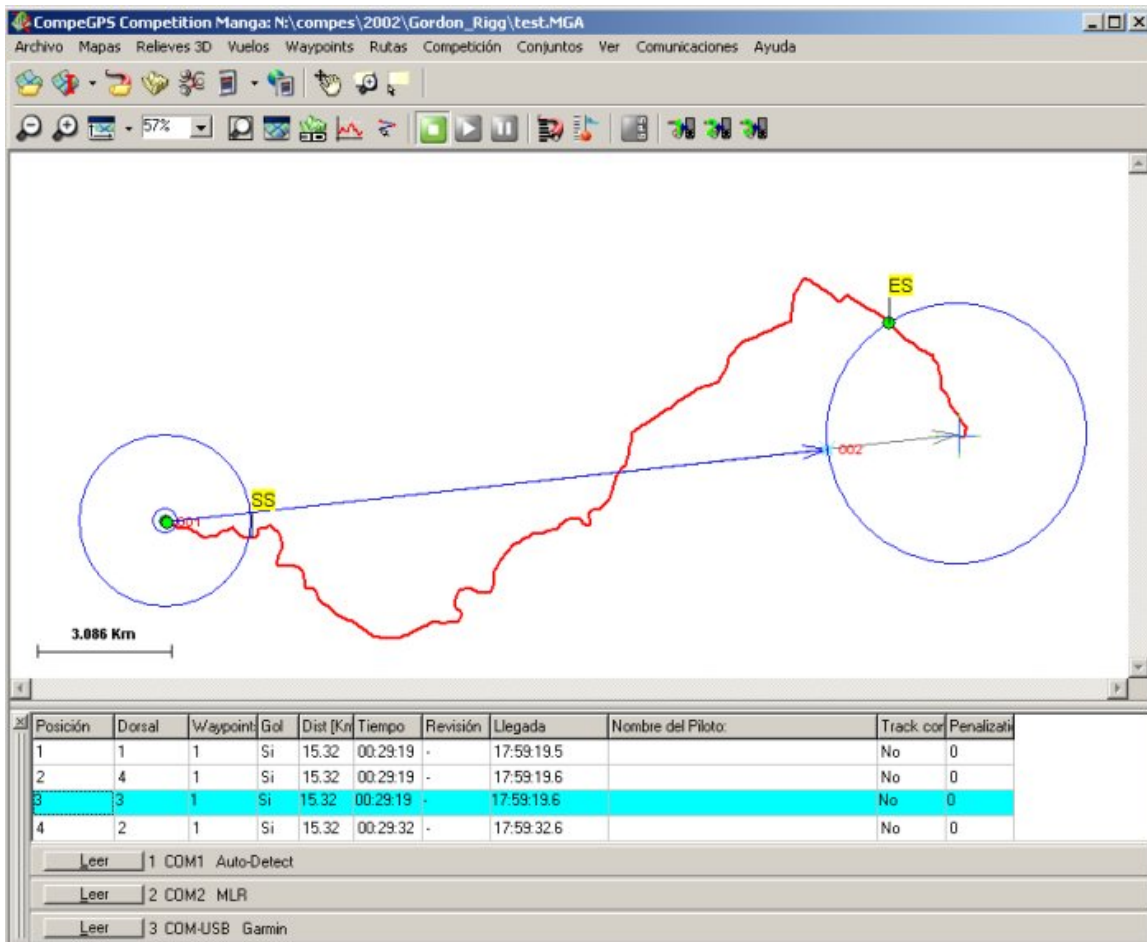
6.5 13 seconds problem

The GPS internally work with the GPS time. This time is a bit different than the UTC time. To be exact, it is 13 seconds ahead.

The new GPS receivers display all the information in UTC. But some old models give the time in GPS time. This means that if two pilots arrive at the goal at the same real time, but one of the pilots has an old GPS he **will loose 13 seconds**.

Almost all the Garmin GPS can be updated: At the Garmin web page, you can find a recent firmware for almost all the models: www.garmin.com.

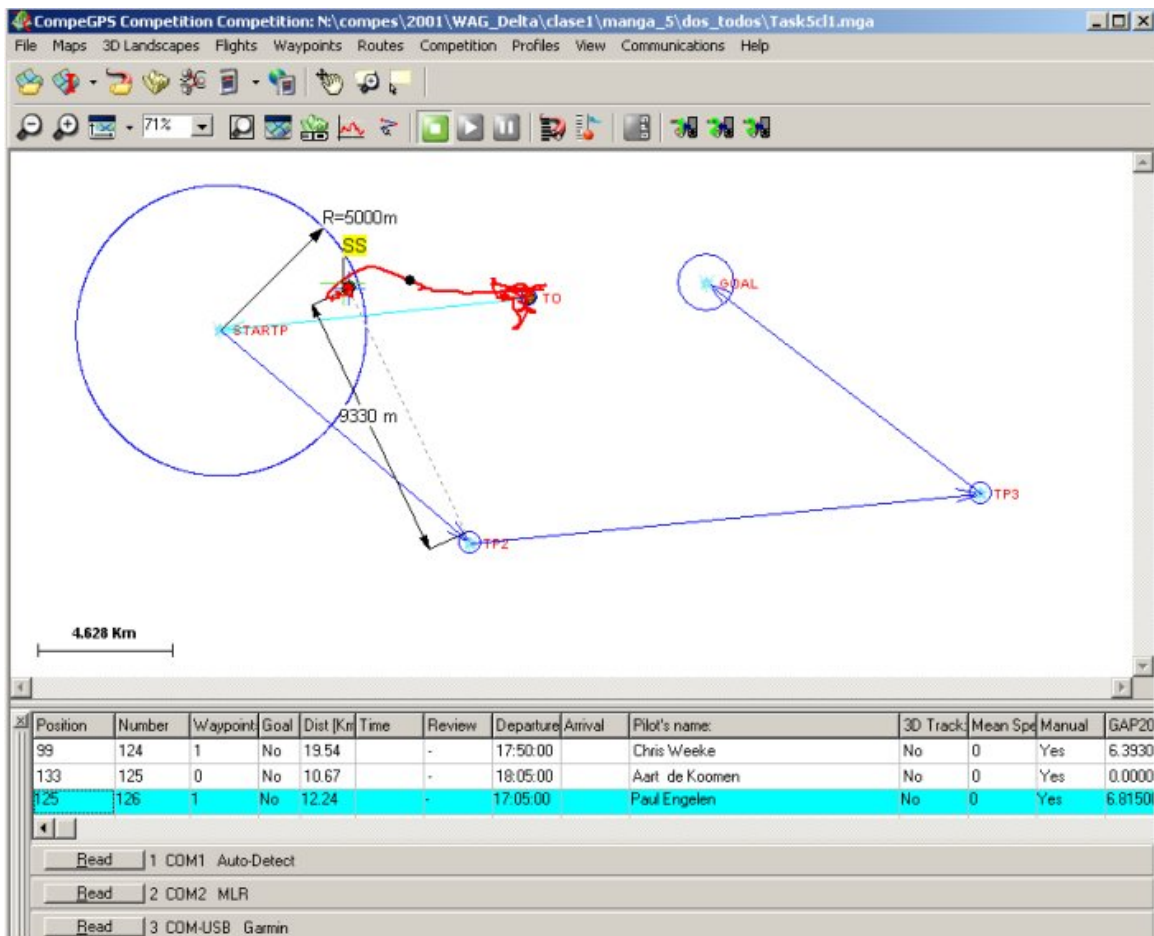
You can here see a simulation of a task: 4 GPS were moved together in a car (from the user's house to his work). You can see here 4 GPS12. The new versions give a correct arriving time. The old one (GPS12XL, 3.53) arrives 13 seconds later.



The Garmin GPS12 version 3.53 cannot be updated to newer versions. We are not sure whether to modify future versions of CompeGPS to add 13 seconds to this model of GPS. Please contact us with your have some opinion on this matter.

6.6 The short route

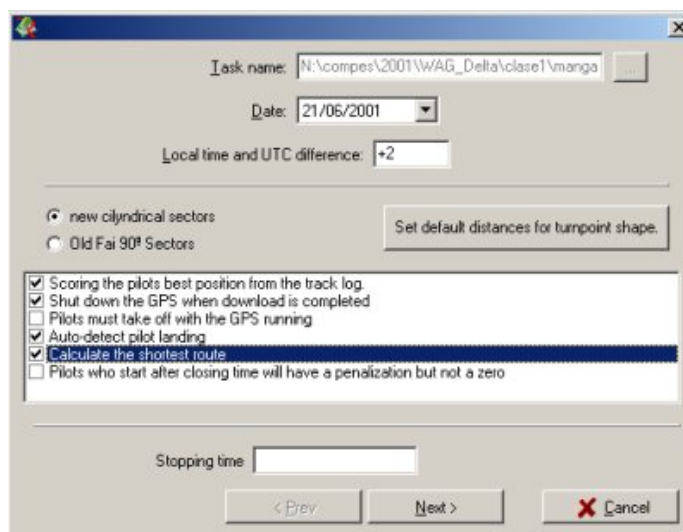
Some cases, tasks have different radius for the waypoints, for example, a Start-Point of 6 Km, like in this competition of the WAG2001:



In this case, if a Pilot enters the start-point, he automatically gets extra bonus Km towards the centre of the cylinder. Look at pilot # 126: He only made 7 Km, but he received 12.24 because he landed at the beginning of the start-point. **He is getting 4 extra Km.**

An **initial solution** is to create previous waypoint before the start-point, locating it exactly in the centre of the Start-Point. In this way the pilots will first have to go to the centre (the waypoint) and then wait at the perimeter of the Start-Point until the opening time.

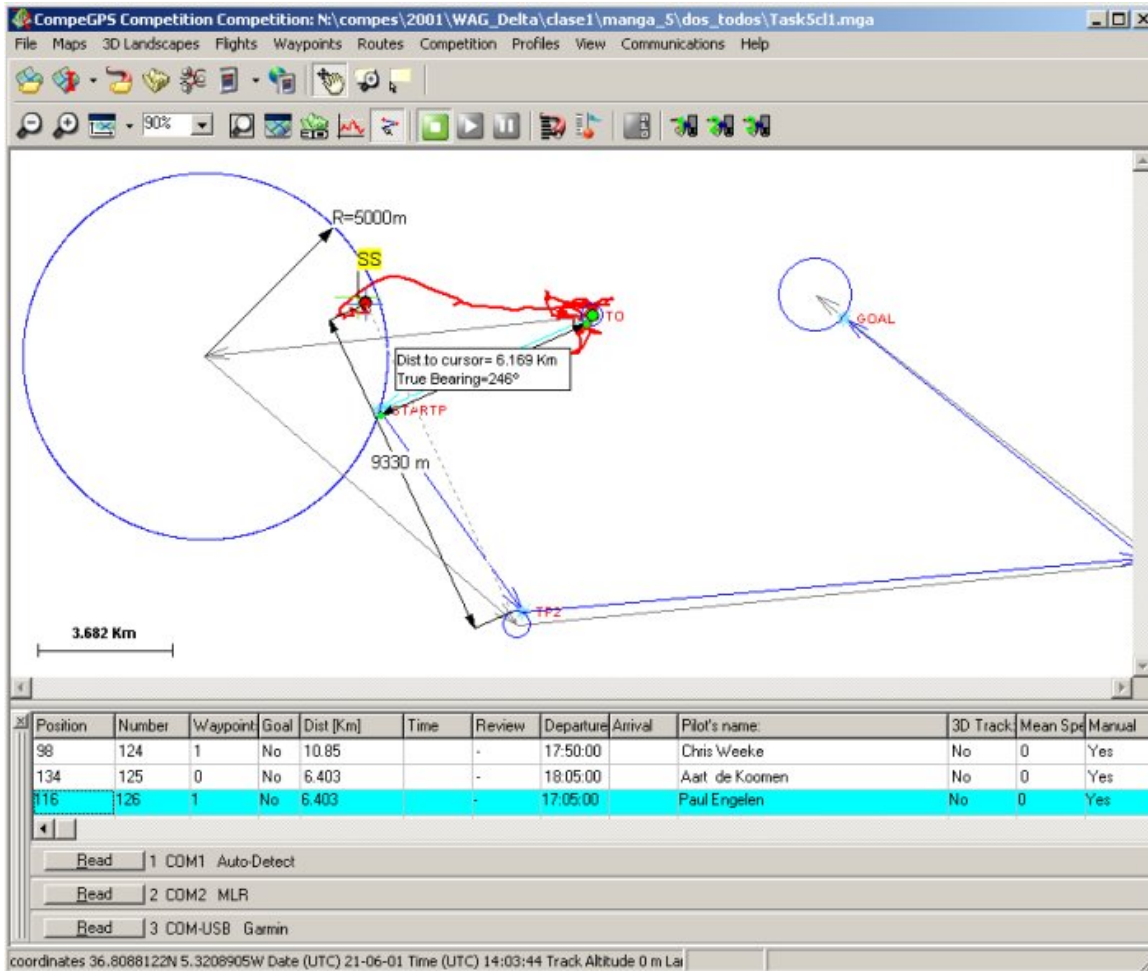
The **second solution** is enabling this option in the task set up:





As a result, two different routes will be drawn in the screen: the blue one will be the normal task, and the grey one will be the 'shortest route'. If a pilot lands at the beginning of the start-point, then he will only receive the Km to the border of the start-point.

In this example, the blue route is the shorter one. Now, our pilot 126, has received only 6.4 Km.



7 Annex

7.1 Compatibility with Race

7.1.1 Exporting waypoints

CompeGPS can directly send all the waypoints to RACE. (With the old version, you had to manually re-type all the waypoints). To send waypoints to RACE, you have to first load the waypoints file. Then in CompeGPS click on the menu option: "**Competition / Export waypoints to RACE**". CompeGPS will ask you for the MBD race file, and then CompeGPS will send all the waypoints to RACE.

You can also carry out the opposite operation: You can import all the waypoints from RACE to CompeGPS. In CompeGPS use the menu option: "**Competition / Import Waypoints from RACE**". CompeGPS will ask you for the MBD race file; it will then read all the waypoints from RACE and create a CompeGPS waypoint file.

Then, in the **RACE** program, you will have to enter the pilots' data (name, number, etc).

7.1.2 Exporting results

After reading all the pilots, the results can be exported back to **RACE**. Click on the menu option "**Competition / Send Task Results to RACE**".

The results are then directly transferred to the **RACE** database.

Go back to RACE and open the competition. You will see there that the results are there. No 'Export Task' or 'Import Task' are needed.

To print the results, in RACE click on: "**Reports / Task Result**".

You could also make a WEB page with the animation of this task. Using **CompeGPS**: click on the button '**Options / See come flights**'. Then select the flights you want to show. Then, from the main window, select "**File / Save as WEB page**"