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REVISION HISTORY

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REFERENCED DOCUMENTS

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1			
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DEFINITIONS, ACRONYMS AND ABBREVIATIONS

Abbreviation	Description
EP	E-Go Pocket
CC	Clubhouse computer
GUR	Ground Under Repair

Definition	Description

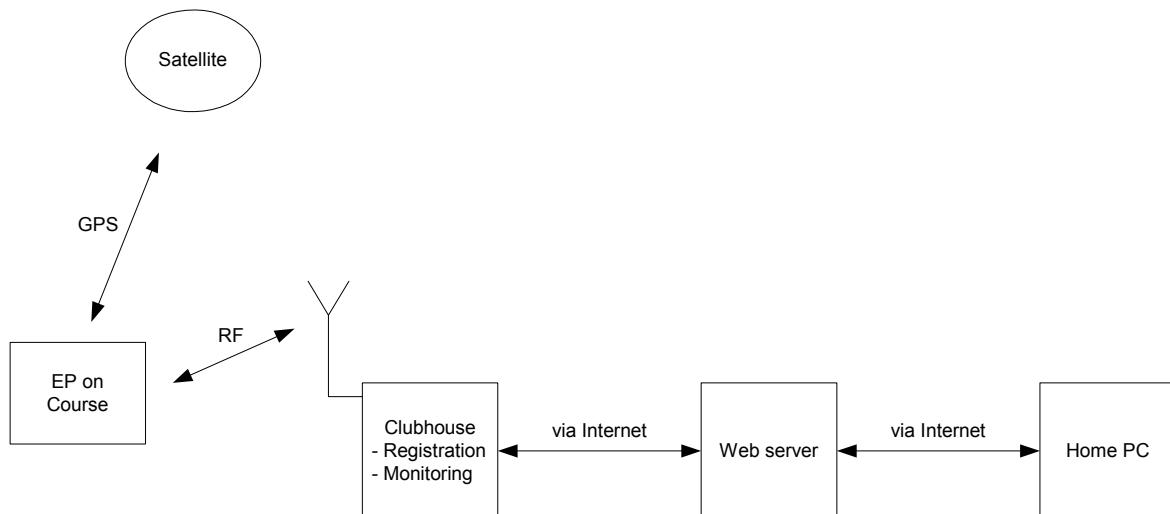
1 INTRODUCTION

1.1 The EGO System

The EGO System contains several parts, this document will mainly cover the usage of the EGO Pocket, but for all functions in the EGO Pocket to work we must have more parts in the system.

The EGO System is divided into five different parts:

- Clubhouse Computer – used by the golf club personnel
 - Registration application
 - Monitoring application
- Base station – connected to the CC for communication with the EPs on the field
- EGO Pocket – used by the golfer
- Webserver – the global database with all data from all golf clubs, players and rounds played
- The personal computer at the players home – for access to all personal statistics



Before the round a player is registered for playing golf in the Pro Shop, when he has gotten the EP he goes his round of golf.

During the round the EPs are sending their position to the CC and the personell in the CC can send messages to the EPs on the course.

After the round the player returns the EGO Pocket to the ProShop and gets a printed scorecard in return. The data from the round is then transferred to the global database. When the golfer comes home he can go to the website and look at his statistics.

2 USER INTERFACE

2.1 The EGO Pocket hardware

The EGO Pocket is a handheld device developed specifically for the EGO System. It consists of:

- A large display chosen for its good visibility quality in sharp sunlight
- On the display there is a touch screen with a simple interface. Preferably use a tee for clicking on the screen.
- A radio antenna is situated in the bottom of the EP. The EP communicates with the CC via the licence free radioband 915 MHz.
- A GPS antenna is situated in the top of the EP, used for getting the exact position on earth.
- A light sensor is situated in the top left corner, this is used to change the amount of backlight dependant of the surrounding light condition.
- A buzzer, used for feedback when pressing a button or the screen, is situated on the back.
- A Positioning button above the display to the right – used to increase the score and register the new position of the ball
- A lock button above the display to the left – used to turn on and off the touch screen and Positioning button.



2.2 General

2.2.1 Icons and buttons on the map

Icon for the aim point	
Icon for the ball	
Icon for the flag	
Icon for the position of the EP on the course	
Zoom buttons: Green and Full/Remaining	

2.2.2 The right column and buttons

The colors of the buttons indicate the mode:

- light grey – not active
- dark grey – the button is pushed down
- light grey with magenta frame – active



1. Hole number - information of the hole and possibility to change hole
2. Score –change score (strokes and putts) of the current hole, then go to next hole
3. Distance to pin
4. Distance from aim point to flag
Distance from ball to aim point
5. Club button – register which club you will use
6. Correction button – change registered ball position, make water stroke, etc
7. Scorecard button – look at the scorecard with the result of your foursome
8. Info button – read rules, send messages or change mode

The buttons and information 1, 2, 7 and 8 appear in both Basic and Pro Mode, while 3, 4, 5 and 6 are only visible in ProMode.

2.2.3 Lock button

It is recommended that you lock the touch screen with the lock button (the left button above the display) every time that you put the pocket in the bag or you pocket. This will prevent involuntary clicking, by turning off the positioning buttons and the touch screen. It will also save the battery, by turning off the backlight. The EP will automatically lock the screen if you do not touch the screen for 20 seconds. To unlock, click on the lock button.

2.2.4 Position button

When you press the Position button, placed to the right above the display, the action taken is:

- Increase the score by one
- Register a new position for the ball
- Send a message to the clubhouse computer

When the EP is used in Pro Mode it will also update the yardage book to show the remaining part of the hole calculated from the ball position, while Basic Mode always shows the hole from the EP position to the pin.

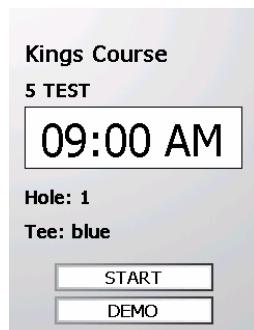
3 NORMAL USAGE OF THE EGO POCKET

The EP application has two modes; Basic and Pro Mode. All functionality implemented in the Basic mode is included in the Pro mode, with some minor changes. Therefore the use of the general functionality in Basic mode is explained in detail, followed by a chapter of the specific details for Pro Mode.

3.1 General functionality

3.1.1 Starting up

When the EP is handed to the player in the ProShop it will be configured with golf course data, tee and pin positions, start time and the player's personal information (hcp and clubset if it is registered on the internet). If a greenkeeper moves a flag while the player is on the golf course the new position will be received by radio from the clubhouse and registered in the EP.



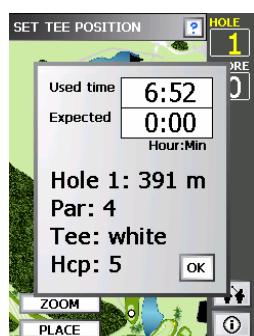
The dialog shown when the EP is started displays:

- Course name,
- Player name,
- Tee time,
- Tee number and
- Tee color.

When the player has verified that the configured is correct, the application should be started. It is also possible to start the application in a DEMO mode. This means that the player can click around without creating any statistics or sending any messages. When the tee time is getting close the player will be reminded that he should start the application for the game.



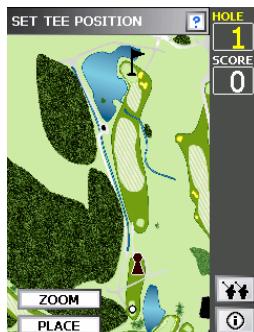
The next dialog is for selecting from which tee (color) the round will be played. Tee positions, distances and scoring will be affected by this choice.



The EP application will now be started in Basic mode, now the information about the first hole is displayed;

- time,
- hole number,
- length,
- par,
- tee color chosen and
- handicap.

3.1.2 Mark the tee



The current tee box positions should be registered by the greenkeeper, but the player should mark where he intend to tee up. This is because the registered position is approximate and some golf courses may not update the tee position. Additionally since the player may tee up up to two club lengths behind the tee markers, the exact position might be desired. When the tee has been registered the player can check distances to hazards and various features on the hole.

3.1.3 The player position



The player icon displays where the EP with the player is on the golf course. The map always shows the remaining part of the hole, from the EP position to the green, independent of whether the player is on the fairway of the current hole or if he/she has made a slice to the adjacent hole. The image of the remaining part of the hole will be constantly updated when the player approaches the green.

If the EP is taken outside the course boundary a sonar alarm will start and a dialog open to tell the player the reason of the alarm, to make the alarm stop the EP should be taken inside the course boundary again.

3.1.4 Distance information

The distance from the player icon to the flag will always be visible in the right column, if you click on the pin distance it will be enlarged.



It is easy to get the distance to any point on the course. The player can click anywhere to get the distance from the current position to where the player clicked.

3.1.5 Register a stroke



When a stroke is made the player can register the new position of the ball by going to the ball and pressing the positioning button over the ball. When this is done the EP registers the new ball position and increases the number of strokes by one. The length of your stroke will be visible for 2 seconds then it will disappear.

After the landing position on green has been registered the EP should be locked and put in the pocket until the putting is done.

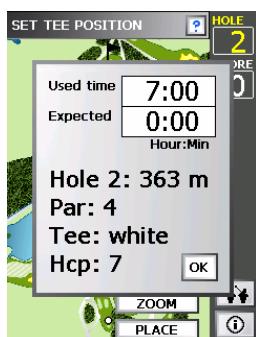
3.1.6 Add puts and proceed to next hole



There are two ways of making the EP proceed to the next hole. The first one is most natural; when the putting is done the player can click on the score number to get to the strokes and putts dialog. Here the player fills in the putts and possible penalties for the hole and then click “NEXT TEE”. If the hole was not finished correctly the player clicks the check box “Did not finish” and upon leaving the score will automatically be set to par + 5 and shown with an “X” in the scorecard. The second way of changing hole is an automatic feature; when EP is moved from the current hole to the following hole it asks if the player has completed the hole. If the

answer is “No” the game will continue on the current hole and if the answer is “Yes” the Strokes and Putts dialog will be shown. Now the player fills in the putts and any penalties and then presses “NEXT TEE”.

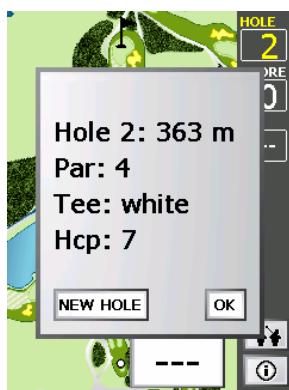
3.1.7 Information between holes



When “NEXT TEE” is selected from the Strokes and Putts dialog a new inforamtion dialog will appear on the screen. The dialog displays the following information:

- Used time; how much time you have spent since your tee time
- Expected; how much time you should have spent
- hole number and length,
- par,
- tee color chosen and
- handicap

3.1.8 Information on the hole and switching holes



When the hole number is pressed, the same information as above is shown, except for timing. In addition another button “NEW HOLE” is available. Upon clicking the player has the opportunity to select and play any hole on the course. Note: any previous results will be erased.

3.1.9 Scorecard

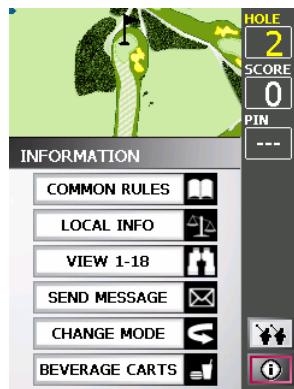


The scorecard is shown by clicking the Score button (indicated with two golf players). The scorecard is devided in to two pages with the first and last nine holes.

It is always possible to look at the scorecard to see the scores for all holes. If there are more than one player in a foursome the other players scores should be visible as well.

It is possible to change ones own scores after a hole is finished.

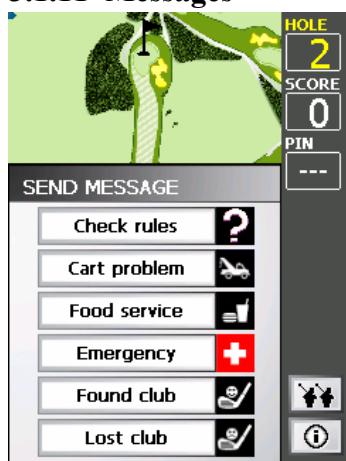
3.1.10 Information and messages



Under the Info button the player will find the most *common rules* and *local information/rules* for the specific golf club. It will also be possible to look at another hole then the current played one. Likewise it is possible to *send messages* and to *change mode* from this menu.

If the golf course have specific beverage carts there is a button which displays in text where the carts are now.

3.1.11 Messages



When selecting “SEND MESSAGE” in the Info ialog a selection of messages to send is shown. They are as follows:

- check rules,
- cart problems,
- food service,
- emergency,
- found club and
- lost club

3.2 Additional functionality in Pro Mode



The most fundamental difference from the Basic mode is that the distances you get when you click on the screen will be measured from the latest registered ball position instead of the GPS position of the EP. The distance to pin in the right column will still be measured from the EP position.

When clicking on the map a distance square will appear on the screen, there will be two different distances in the square;

- bottom, distance from the ball to the aim point,
- top, distance from the aim point to flag.

The distance square will cover half the map during 2 seconds to make it easily readable, then it will shrink and be positioned in the right column above the other buttons. If it is clicked it will again be enlarged for 2s.

3.2.1 Zooming functionality

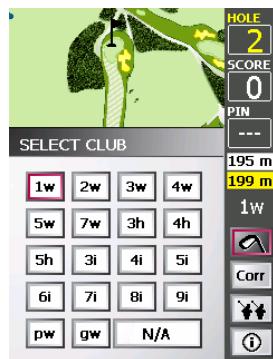
With the zoom buttons you can change the zoom level on the yardage book:

- Full – shows the entire hole, from back tee to green
- Remaining – the default zoom level, shows the remaining part of the hole, from the position of the ball to the green, independent of whether the ball is on the fairway of the current hole or the player has made a slice to the adjacent hole. The image of the remaining part of the hole will be constantly updated when the player registers a new position for the ball.
- Green – a close-up of the green

3.2.2 Club statistics

The advantages of using this mode is the possibility to save the information of how the player is using his own clubs, where he aims and lands with all specific clubs.

The last position the player clicks at for getting distances will be the aim point stored in the EP for the statistics.



When the aiming is done and the stroke shall be made the player registers what club he intends to use under the Club button. If the player have visited the internet site and registered the content in his own bag he will see these clubs in this club menu, otherwise he will have the 18 default clubs to chose from.

3.2.3 Register a stroke

When the stroke is made and the player have reached the ball he holds the EP over the ball and click on the Positioning button (the right button above the display) in the same way as for the player using Basic Mode.

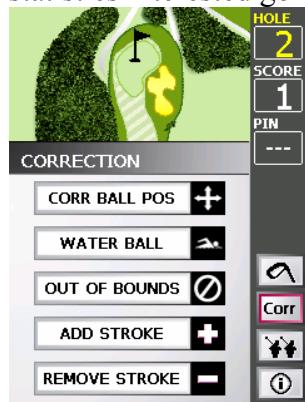
When you push this button you

- increase the score by one,
- register a new position for your ball (the length of your stroke will be visible for 2 seconds then it will disappear)
- update the map in the EP to show the remaining part of the hole (from ball to flag).

When the new ball position is registered it is time to start aiming again. The players checks the distance to interesting hazards and decide where he wants the ball to land. Indicate which club he will use and make the stroke. When the player has registered the new ball position and reached green he should make the putts and leave the green.

3.2.4 Correction functionality

Under the Correction button there are some extra features that may be used by the more statistics interested golf player:



- Correct ball position
- Water ball
- Out of bounds
- Add stroke
- Remove stroke

Correct ball position

You can correct an already registered GPS position of the ball by pushing *Corr ball pos*. The image will be zoomed in over the registered position of the ball, the player can click where the ball should be positioned and click "Place". This feature may be used when the accuracy of the GPS module fails and for example places the ball in the bunker although it should be positioned right next to it.

Water ball

To register a stroke as a *water ball* mark where in the water the ball landed and then mark the position of the drop or choose *Rehit* from the same position again. One stroke and one penalty will be added to your scorecard.

Out of bounds

The *out of bound* feature works in the same way as the water ball but it is not necessary to choose where to drop, since the ball should always be hit from the same position again.

Add stroke

This is used to add a stroke to a position without being at this position, for example if the player forgot to mark the landing position on the green. Adds on stroke on the map and in the scorecard.

Remove stroke

To remove the last stroke registered, the result is the same as clicking the minus button for strokes in the Strokes and Putts dialog.

4 IMPORTANT INFORMATION

4.1 FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device must not be co-located or operating in conjunction with any other antenna or transmitter.

This device has a built in radio and antenna. Unauthorized modifications or attachments to antenna and / or radio could damage the unit and may violate FCC regulations. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the device and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.