



# Manual

# I-Cane Mobilo<sup>®</sup> 2.1

# folding cane



## **Liability**

YOU MUST BE AWARE AT ANY TIME THAT THE USE OF NAVIGATION USING GPS OR THE USE OF ULTRASONIC SOUND TECHNOLOGY CANNOT RESPOND TO PHYSICAL INJURY. I-CANE CANNOT BE LIABLE FOR ANY DAMAGE DURING USE OR AS A RESULT OF USE OF HARDWARE AND / OR SOFTWARE OFFERED BY I-CANE AND / OR THROUGH RESELLERS.

I-CANE CANNOT BE LIABLE FOR ANY USE AND THE CONSEQUENCES OF USING THE I-CANE MOBILLO® AND THE I-CANE GO® APP.

## **A. Important**

We thank you for purchasing an I-Cane Mobilo® 2.1. If you treat the I-Cane Mobilo® carefully then you can use it trouble-free for years. Take the time to read this user manual carefully before using the I-Cane Mobilo® 2.1. Keep this manual for future reference. This manual differs from the manual of the I-Cane Mobilo® 1.1 in parts.

If this manual contains photos and images, they are intended to support the text, not to replace it.

### **What's in the box ?**

The shipping box of the I-Cane Mobilo® contains the following products:

- A smaller box containing the handle of the I-Cane Mobilo® , the USB charger of this handle and a special USB cable.
- Folding cane with 3 or 4 segments that are made to length especially for the user.
- A folding point with elastic hook is attached to the folding cane.

Important: keep the packaging box; it may still be useful for service and / or return.

## **What is the I-Cane Mobilo® ?**

The I-Cane Mobilo® 2.1. is an intelligent white cane for touch and recognition, intended for people who are blind or visually impaired. The I-Cane Mobilo® combines obstacle detection with navigation and gives tactile warnings and directions with the help of a unique tactile arrow integrated in the handle. The I-Cane Go® Application (App) is used for the navigation program. This app must be installed on a smartphone. Mobilo® (handle with folding cane), and app (software) form together, the I-Cane Mobilo® and communicate mutually by means of Bluetooth.

## **Training required**

As a user of an I-Cane Mobilo®, we strongly advise you to follow or have followed a training in the use of a touch cane as a mobility aid plus a training in the use of the I-Cane Mobilo® . These courses have been or will be provided by a mobility-instructor.

In order to use the I-Cane Go® App successfully, you must have adequate orientation skills and be sufficiently mobile as a pedestrian. The instructions of the mobility instructor must be followed at all times. Traffic rules always have priority. The I-Cane Mobilo® has been developed as a walking aid and should therefore only be used for this purpose. The user is responsible for compliance with the foregoing.

## **Treatment of the product**

Handle the I-Cane Mobilo® with care and do not drop it.

Do not open the handle. This can damage the electronics and you will lose your warranty claim.

Do not expose the I-Cane Mobilo® to extremely high or low temperatures.

Use and store the I-Cane Mobilo® in places with a temperature between -5° and + 35° C. The battery usage time can be shorter during cold conditions.

Only clean the I-Cane Mobilo® with a slightly damp and soft cloth. Do not use chemical products or abrasives, they can damage the product.

The handle of the I-Cane Mobilo® can withstand splashing but is not waterproof. Do not immerse the Mobilo in water.

## **Charging with the special magnetic micro USB connector**

This product may only be charged with the supplied USB adapter or another USB adapter (5V, at least 400mA). Use only the supplied special USB cable with a magnetic micro USB connector in the handle. Hold this magnetic micro USB connector close to the similarly magnetic charging point in the handle and the

connection will be established "automatically". Full charging of an empty battery takes about 4 hours. See also 2.2 and 2.3.

### **Use in traffic**

Always obey the traffic rules, and check traffic conditions before following the instructions from the sensor arrow or voice information.

The I-Cane Mobilo® with a red belt can be used as a touch or recognition cane and can be recognized as such by the public and legislator.

### **Obstacle warning**

The obstacle warning is intended to alert the user to obstacles above the Comfy Wheel® and at breast and head height.

However, I-Cane Social Technologies cannot guarantee that all objects will actually be noticed. The applied ultrasonic sensor in the I-Cane Mobilo® has limitations when it comes to sighting smooth objects, soft materials and small objects at the edges of the scanning area.

Nor can the sensor detect obstacles such as objects farther ahead, pits, stairs down and curbs. For these obstacles, the touch cane and your own perception remain necessary.

It should be noted that the obstacle warning of the Mobilo also functions without a connection with a smartphone .

### **GPS restrictions**

Although in the handle of Mobilo 2.1. an extra sensitive GPS antenna is incorporated, the I-Cane Go® App can not provide guarantees about the reception of the GPS signal in case of a limited range of satellites. GPS devices work best in an open outdoor area. GPS devices usually do not work well inside buildings, under roofs, in narrow streets, between tall buildings, in tunnels and etc. In short : in places where clear view of the sky is limited , the GPS reception is usually weak or missing.

I-Cane GLONASS signal : GPS positions often deviate a few meters from the indicated location. The program can indicate that the final destination has been reached, while in reality this is still a few meters away.

### **Navigation program Go**

The directions instruction provides support when following a route to a final destination, but should not be followed too literally. The program helps to choose the right street and the user will have to use his orientation and mobility skills to find and follow the street. This applies to a large extent especially when crossing. Always stay alert to the traffic situation when using the I-Cane Mobilo® direction indicators .

Always be aware that the use of route navigation and obstacle warning is not a guarantee of safety and that caution is also required when using the I-Cane Mobilo® and I-Cane Go® .

### **Reuse and disposal**

Do not dispose the product with household waste. Follow local instructions regarding the collection of electronic products.

### **Protection of privacy and copyright**

The I-Cane Social Technology Privacy Policy explains how we handle your personal information and how we protect your privacy when you use our products and services. By using our services, you agree that I-Cane SOCIAL Technology can use such data in accordance with our privacy policies.

[www.I-Cane.nl](http://www.I-Cane.nl) .

## **B. Instruction for use**

### **Instruction at first use**

I-Cane strongly advises users of the I-Cane Mobilo® to follow an instruction program at one of the regional provisions for revalidation and education. During this training, the first routes are recorded with you . The instructor helps to install the navigation program on your smartphone and will explain it to you. Outside, the mobility instructor focuses on using the I-Cane Mobilo® as a tactile and recognition cane in combination with the obstacle warning, recording and using routes and applying the ' Where am I? ' position.

### **Contents usage instruction**

1. Meet the I-Cane Mobilo® (handle, tactile arrow, push buttons, sensor, Comfy Wheel® parts and tip)
2. Prepare for use
3. Obstacle avoidance
4. Meet the App ( Smartphone )
5. The Where am I? position
6. Recording routes
7. Linking the I-Cane Mobilo® with the I-Cane Go® (App)
8. Switching the obstacle function on and off in the I-Cane Go®
9. Use routes from the route list
10. Deviate from the route
11. Directions for use of the I-Cane Mobilo® in bad weather
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## **1. Introduction to the I-Cane Mobilo® (handle, tactile arrow, push buttons, sensor, Comfy Wheel®, parts of the foldable cane)**

- 1.1 The I-Cane Mobilo® consists of a handle with tactile arrow, push buttons, obstacle sensor , folding cane with Comfy Wheel®, charger and a storage cord. The handle contains the electronics and a rechargeable battery.
- 1.2 The navigation program for the I-Cane Mobilo® consists of the I-Cane Go® App. This program is installed on a Smartphone.
- 1.3 The I-Cane Mobilo® distinguishes itself from a normal white cane by the tactile arrow in the handle. This tactile arrow tilts as a warning with regard to height obstacles and turns as an indication of the direction to be followed.
- 1.4 The user of an I-Cane Mobilo® places the thumb or index finger lightly on top of the tactile arrow, so that tilting and turning movements can be noticed.
- 1.5 Tilting the tactile arrow upwards means that an obstacle has been detected above the Comfy Wheel® and that the user must stop or divert in order not to collide.
- 1.6 A horizontal rotation of the tactile arrow means a directional indication. The tactile arrow has 4 basic directions: ' Go straight ahead ' , ' Go left ' , ' Go right ' and ' Go back ' . There are separate turning movements for ' Start ' and ' Destination Reached ' .
- 1.7 The vertical tilt is activated by the sensor (sonar) that is placed in the flat part of the handle. This sensor constantly scans the area above the Comfy Wheel® and detects obstacles that arise there.
- 1.8 The rotations are controlled by the I-Cane Go® navigation program (I-Cane App) on the Smartphone .
- 1.9 Movements of the arrow feel at height obstacles and changes in direction can be accommodated both together.
- 1.10 All movements of the tactile arrow are supported by audio signals in spoken and / or 'beep' form.
- 1.11 On the handle of the I-Cane Mobilo® , between the tactile arrow and the sensor, are two tactile push buttons. These are intended to switch the I-Cane Mobilo® on and off and to perform functions such as the ' where am I? ' position.
- 1.12 On top of the handle, there are three indication LEDs . The outer ones relate to the charging of the battery. One LED with red light indicates charging and the other LED with blue light indicating that the battery is fully charged. These LEDs only light up with a connected charger . The

middle LED gives white light when the Mobilo is switched on and goes out when the Mobilo is switched off.

- 1.13 The handle of the I-Cane Mobilo® 2.1. can be used in combination with a special folding cane with red band. Depending on the length of the user, this folding cane consists of 3 or 4 segments. The segments are provided with small cams and recesses, so that the folding cane segments are always positioned mutually in the same way. This also applies to the connection of the folding cane in the handle.
- 1.14 A Comfy Wheel® can be attached to the lower part of the folding cane via an elastic hook. However, the Comfy Wheel® must be able to roll in the forward direction.
- 1.15 Attaching the folding cane to the handle can be done by inserting the correct part of the folding cane into the handle, which also includes the magnetic coupling. By slightly pulling the folding cane out of the handle, both parts are disconnected.
- 1.16 The handle of the I-Cane Mobilo® contains a rechargeable battery as a power supply for the motor and the tactile arrow. The special magnetic micro USB charge connector is located at the bottom of the handle under the sensor. The charging cord can be connected to this micro USB with the same magnetic coupling. Disconnection takes place when pulling the charging cord connector lightly.
- 1.17 Always take care of a charged battery. A message is given when the battery needs recharging. The battery cannot be replaced independently by the user .
- 1.18 The I-Cane Mobilo® can be used both left-handed and right-handed.



## **2. Preparing your I-Cane Mobilo® for use**

- 2.1 Take the I-Cane Mobilo® out of the package.
- 2.2 You must first charge the I-Cane Mobilo® . You can do this by connecting the I-Cane Mobilo® to the power supply using the supplied magnetic USB charge cord. Charge the I-Cane Mobilo® before you start using the Mobilo®. During charging the red LED lights up, when the battery is full the blue LED lights up. If the battery is empty, it will take approximately 3 to 4 hours before it is full again.
- 2.3 A full battery lasts, depending on the extent of use, about one day.
- 2.4 Expand the cane segments of the folding cane. The cane length is specially adapted to the user . Each segment has lugs and recesses. Make sure that the lugs of the connecting pipes fit into the recesses in the other part. As a result, the segments are mutually fixed in the same position. Slide the folding cane into the handle, also pay attention to the correct position of the lug and recess. The coupling of the folding cane with the handle is magnetic.
- 2.5 The Comfy Wheel® is attached to the lower segment with an elastic hook. If necessary, adjust the wheel by holding the cane part and then turning the wheel holder that rolls the wheel in the running direction.
- 2.6 The angle the Comfy Wheel® attached to the cane has an influence on the working of obstacle warning. The greater the angle, the more the sensor detects forward. The smaller the angle, the more the sensor detects in height. The optimum functioning of the sensor (observation forwards and upwards) is at an angle of 45 degrees. I-Cane has adjusted the length of the folding cane to this. Familiarize yourself with the operation and range of the sensor and the actions of the tactile arrow. See also Chapter Obstacle Avoidance (3).
- 2.7 The I-Cane Mobilo® is switched on and off with the left push button behind the tactile arrow . Switch on the Mobilo by pressing this button for a full second. The LED with white light turns on. The activation is confirmed a little later by sound signals and movements of the tactile arrow. To turn the Mobilo off, push the button for about 5 seconds. With successful switching off, the white LED light goes out. Do not switch the Mobilo off and on again in quick succession, the system may then not be sufficiently closed and will therefore not switch on.
- 2.8 After switching on, always check whether the sensor is in action by moving a hand at least 5 cm above the sensor or by turning the sensor for example towards a wall. An audio signal sounds and the arrow arrow tilts.

2.9 The I-Cane Mobilo® is now ready as an obstacle detection cane (chapter 3), but not yet for navigation (chapter 4.).

### 3. Obstacle avoidance

- 3.1 The sensor on the I-Cane Mobilo® scans the area above the Comfy Wheel® for possible obstacles at chest and head height. This concerns hanging objects such as branches, awnings, signs, tail lifts of trucks, etc.
- 3.2 Obstacles in height above the Comfy Wheel® are by definition close and potentially dangerous. Stop immediately if the audible signal goes and the tactile arrow tilts. If necessary, use the free hand to discover the cause, but it is safer to search for the free passage with the cane. Once it has been found, the tactile arrow will tilt back to the horizontal position. The navigation program remains active in the background when switched on.
- 3.3 The scan area starts at 50 cm from the sensor to prevent unintended activation by hand, head, or to avoid jacket. The scanning area extends in width to a generous shoulder width and is cut off at the height of the Comfy Wheel® and slightly above the head.
- 3.4 This feature makes it necessary for the cane user to hold the I-Cane Mobilo® in front of him and to avoid unintentionally swiping the cane around her axis. If that does happen, the sensor also detects obstacles etc. that are located to the left or right of the user. With conscious use of the turning, the user can explore his environment, follow guide lines, etc.
- 3.5 Hand position, height and cane movements of the user influence the scanning area and thus the effectiveness of this function.
- 3.6 Movements of the cane will be monitored by the sensor. This has the advantage that the position of the obstacle can easily be located and it can then be passed.
- 3.7 Due to wide pendulum movements and / or rotations of the Comfy Wheel®, obstacles outside the walkway can also be noticed. This may be a little awkward at first, but may provide additional information over time, such as when following a natural guide line or finding landmarks.
- 3.8 Practice using this function in different situations so that knowledge, experience and skills and become acquired and reduce the risk of a collision.
- 3.9 To ensure that obstacle avoidance works optimally, the I-Cane Mobilo® is equipped with a Comfy Wheel® which can move itself in various directions when the user moves manually to the left or to the right. Definitely do not rotate the wrist; it is better to make a swipe movement. This keeps the sensor scanning upwards in a stable state. *Avoiding*

turning the wrist should be specifically trained. Using the Mobilo® as described above, relieves wrist, elbow and shoulder joints.

Note: The obstacle warning is automatically switched on and off when the I-Cane Mobilo® is switched on / off . When using the I-Cane Go® navigation program , this function can also be switched on and off in the app . This is described in chapter 8 .

- 4. Introduction to the I-Cane Go® App on the smartphone (= iPhone)**
- 4.1 The I-Cane navigation program as Go App are available on the App Store or app market.
  - 4.2 This manual assumes that you have a smartphone and you are familiar with its special operation using the Voice Over / Talk Back / Zoom function. You are also familiar with opening, starting and closing Apps.
  - 4.3 Download and install the I-Cane Go® App. Follow the following steps:
    - 4.3.1 Go to the App Store and search / choose the I-Cane Go® App.
    - 4.3.2 Click Install.
    - 4.3.3 Log in with your Apple ID (e-mail address and password).
    - 4.3.4 After confirmation, the I-Cane Go® App is downloaded and placed on the home screen.
  - 4.4 After installation, search for the I-Cane icon and open the navigation program. You will hear the welcome message ' Welcome to I-Cane Go® '.
  - 4.5** Please note that when you open the navigation program for the first time, you do not yet have the full functionality of the I-Cane Go® . The additional functions only become visible after your first connection to the I-Cane Mobilo® . This procedure is described in chapter 7; Linking the I-Cane Mobilo® with the I-Cane Go® App .
  - 4.6 The complete I-Cane Go® navigation program has 3 main functions: (1) Start Route, (2) Where am I ? and (3) Include route. These 3 main functions together with My Settings form the start page of the post vigation program.

The main functions are described separately below.

## 5. The 'where am I?' position

- 5.1 The simplest function of the navigation program is the 'where am I?' position. With the help of this function, street name, house number and place name - in that order - can be requested at any time in spoken form.
- 5.2 This function works best in a street some distance from side streets or an intersection. You can then be sure that you are also in the aforementioned street.
- 5.3 The house number is approximate and offers no guarantee that you are exactly aware of that number. That house number can also be on the other side of the street, certainly in narrow streets. Along wide roads you can count on more whether you walk on the odd or even side of the road.
- 5.4 To be able to listen to a the 'Where am I?' function, it may be necessary to use an earpiece, headphone with bone conductor, collar speaker, carrying case or the like. The smartphone with loud volume in the breast pocket is also possible. If the message is lost due to noise, the 'Where am I?' function be repeated as often as you want.  
Please note, prolonged use of earplugs at full volume can cause hearing damage.
- 5.5 The 'where am I?' function can be performed with the right-hand button (i) on the I-Cane Mobilo® so that the smartphone can be stored safely . Press this button briefly, a double tone indicates that the function is being executed. Wait for the result. This can take a few seconds because a card must be consulted. If the message remains out of use, use the function again.
- 5.6 Tip: also regularly use the 'where am I?' position. This is to determine whether the GPS signal is able to determine your location correctly. Certainly at the start of a route, the process of locating can take a little longer.

## 6. 'Include routes' function

- 6.1 The I-Cane Go® offers the possibility to record your own routes and / or to have them used again later. The advantage of this is that you can always determine the most logical and most comfortable route for you.
- 6.2 The I-Cane Mobilo® is not required for recording a route . But with the more sensitive internal GPS antenna in the Mobilo, the route can be recorded more accurately. If the internal GPS antenna of the Mobilo is available, this is shown in green letters in the top right corner of the smartphone screen (Mobilo GPS).
- 6.3 To record a route , choose the RECORD ROUTE menu button on the home page.
- 6.4 Then press START ROUTE RECORDING and the recording menu will open. Wait until a GPS signal is found. If you are still inside, go outside. As soon as the GPS reception is confirmed , you can start recording . Keep your smartphone in your hand.
- 6.5 The recording menu offers four options: (1) Stop route recording, (2) Mark left, (3) Mark right and (4) Mark straight.
- 6.6 During recording the route you must record directional changes such as Left Turn, Right Turn or Straight On at (important) decision points . Direction changes that are not recorded are also not added to the recorded route. Walking differently than intended will certainly be the case!
- 6.7 It is recommended that you only mark a change of direction if you can actually choose from multiple directions.
- 6.8 At the point where a decision is made about the direction to be followed (turn left, right turn or straight ahead), press the left, right turn or straight ahead button. Your choice is confirmed. For example: "go left is fixed."
- 6.9 Stand still while you do this. This is more convenient when entering and helps you more accurately record your position. Take your time to find a suitable place. Choose your decision points carefully, but do not stand too close to or against the façade (guide line), the GPS signal may be less good there. In such a case, choose the free space towards the roadway.
- 6.10 This place is preferably as far away as possible from walls etc. Once it has been found, the direction indicator can still be recorded.
- 6.11 The extent to which the direction is changed cannot be entered. It is not possible to state a 'little to the left' or 'slant to the right'.
- 6.12 A change of direction such as to the left - turn left - is preferably recorded on the left sidewalk. If this is necessarily done on the right-hand sidewalk - for example, because the left-hand sidewalk is missing - then

- 'Go left' automatically means that the road to the left must be crossed. A 'Go straight ahead' indication is then not necessary.
- 6.13 If, for a change in direction to the left, you first have to cross the side street or intersection, 'Go straight ahead' is included first and 'Go left' directly across the street. While using the route, this should be interpreted as 'Go straight on (cross over) and immediately afterwards turn left'.
- 6.14 Marking 'Straight on' will not always be necessary or desirable. Use this option to your preference. The function is useful for being able to indicate side streets and intersections with car traffic.
- 6.15 Directional directions shortly after each other can be confusing because the corresponding instructions follow each other too quickly and must be remembered in the correct order. Avoid this unless it cannot be otherwise.
- 6.16 If fast consecutive direction indicators cannot be prevented, remember that the corresponding instructions must also be executed in that order. For example: 'Go straight on', 'Go right'. This can be understood as 'Go straight on and immediately after that turn right'.
- 6.17 If a direction indication is entered incorrectly, this can be corrected by entering the correct direction indication within 8 seconds. The program then reports that the last decision point has been corrected with an indication of the new designation (left, right or straight).
- 6.18 Passing or using a roundabout from the right sidewalk has 3 options:
1. 'Turn right': walk up the roundabout and mark the exit to the right
  2. 'Go straight ahead': walk up the roundabout and mark 'Go straight ahead' at the exit to the right; continue on the roundabout and mark 'Turn right' at the next exit (= straight on)
  3. 'Turn left': mark 'turn left' at the crossing before entering the roundabout. A 'Go straight ahead' is no longer necessary.
- Please notice: The same 'rules' apply from the left sidewalk.
- 6.19 Recording a walking route over a square without marked hiking trails is difficult if the user of the I-Cane Mobilo® depends on natural guide lines. The chance of deviating from the route is then large. In such a case, mark the route along the natural guide lines of the square.
- 6.20 Recording a walking route through the forest is possible. Also search carefully for selection points in the forest area and limit the number of clues to go straight ahead. The rule applies more often here, with no 'Go straight ahead' message.
- 6.21 If you have reached the destination of the route, stop the recording via STOP RECORDING. The recording is stopped and the program asks you to

enter a route name. Choose the name and insert it. It can be short or longer. It is important that the route name is clear to you. Press SAVE to record the route .

- 6.22 If you do not enter a route name and immediately choose SAVE, the route name will be provided with the start address and the destination address (street name + city name).
- 6.23 The saved route can be used directly as a route, see Using routes from the route list ( 9 ).
- 6.24 Tip: start and end the recording as close as possible to the start and end points of the route but also pay attention to an unobstructed GPS signal. A canopy or a position directly next to a high building can result in a considerable deviation. Check the location using the "where am I?" position.
- 6.25 Tip: ensure that this start and end point are clearly observable outdoor locations and therefore consist of tangible, visible or audible (unique) features.
- 6.26 The entire route is recorded during the recording process. The decision points that you have marked are automatically added to this route and provided with commands for the tactile arrow and also in spoken form.
- 6.27 The number of routes that can be included and stored in the route list is unlimited. Routes are in the reverse order of recording in the route list, the last recorded route is at the top.
- 6.28 Recorded routes can be deleted from the route list, see Using routes from the route list ( 9 ).
- 6.29 A saved route name cannot be changed / renamed .
- 6.30 A recorded route is not reversible.



## **7. Linking the I-Cane Mobilo® with the I-Cane Go® (App)**

Before the I-Cane Mobilo® can carry out instructions from the I-Cane Go®, a one-time connection should be carried out between the handle and the I-Cane Go® (App). Please follow the next procedure:

- 7.1 Switch on the I-Cane Mobilo®, see 1.11.
- 7.2 Open the I-Cane Go® program on your smartphone, see 4.4.
- 7.3 On the homepage of the I-Cane Go® (App), choose MY SETTINGS.
- 7.4 Then choose HANDLE PAIR.
- 7.5 The program audibly searches for your Mobilo . If your I-Cane Mobilo® is found , you will be notified. Also a audible notification is given when no Mobilo is found.
- 7.6 Choose the device that was found by confirming the Mobilo Identification Code offered.
- 7.7 If the connection has been successfully established, this will be reported and the I-Cane Mobilo® is ready for use. Then choose the BACK button
- 7.8 This connection is maintained as long as the I-Cane Mobilo® and I-Cane Go® (smartphone) are switched on and stay close to each other. If this mutual distance exceeds 5 to 10 meters, the connection will be broken.
- 7.9 A subsequent connection is established automatically when the I-Cane Mobilo® and I-Cane Go® are turned on. The order of activation is not important. The program then always reports that the I-Cane Mobilo® is ready for use.

## **8. Switching the obstacle function on and off in the I-Cane Go®**

- 8.1 The obstacle warning switches on and off automatically with the switching on and off of the I-Cane Mobilo® .
- 8.2 When using the navigation program I-Cane Go® this function can also be turned off and on again without turning off the I-Cane Mobilo®.
- 8.3 Select MY SETTINGS on the homepage .
- 8.4 Select SET OBSTACLE WARNING.
- 8.5 Choose OBSTACLE WARNING ON / OFF.
- 8.6 Check the switching on and off by BY moving a hand in front of the sensor (see also 2.9).

## **9. Use routes from the route list**

- 9.1 For the time being , only pre- recorded routes can be used .
- 9.2 On the home page, choose START ROUTE.
- 9.3 Select the route you want to walk from the route list and wait for the message that the GPS signal is sufficient to start. If you are still inside, go outside .
- 9.4 If you are not in the immediate vicinity of the departure point of the route, you will be notified . You will therefore not receive route instructions . Make sure you get close to the starting point of the route and then start the route again .
- 9.5 With enough GPS signal you hear and feel the assignment to walk. The tactile arrow gives the indication to go 'forwards' .
- 9.6 Going for a walk always means that you are following a roadway , sidewalk or footpath . Only when you are moving, the program can determine your direction and give instructions. If you walk in the wrong direction, it will be noticed and corrected.
- 9.7 Following the route,, the program will limit the directions to points where a decision is made about the to follow direction.  
So those are always points where multiple directions are possible. You may not always be aware of this. The tactile arrow + audio alerts you to this. Side streets are also indicated in this way, even if the route goes straight ahead. You will then be aware of the upcoming crossing or perhaps a side street on the other side of the road.
- 9.8 When the tactile arrow is at 12 o'clock, it always means that you are going straight ahead. You should not take that too literally. Straight ahead means that the road or footpath you have taken must be followed, even if this road is curvy. The tactile arrow does not correct for directional changes on the sidewalk or footpath, that would be the tactile arrow make you very restless . So stay focused on following the chosen road and the traffic on it, only at intersections or junctions will the navigation function active again.
- 9.9 The tactile arrow announces directional changes early with momentary rotational movements corresponding to the direction to be followed. For example, a left turn is announced with a double rotational movement to the left and a turn to right with a double turn to the right. In all cases, the tactile arrow returns to 12 noon, since the real decision point (intersection) has not yet been reached.
- 9.10 Pre Warnings are given (audio + tactile arrow ) on about 30 meters away from the actual decision point, the precise distance also depends on the GPS signal. This is far enough to be able to prepare, for example, to choose the right side and mostly short enough to prevent confusion with intermediate footpaths or driveways.

- 9.11 Arriving at the decision point (intersection / split) the definitive indication of the tactile arrow follows, supported by a spoken message about the direction to be followed. For left turn the tactile arrow turns left and stays there for a bit. To the right, the tactile arrow turns to the right and stays there for a bit. A clue for straight ahead is given when the tactile arrow quickly turns left and right .
- 9.12 The spoken instructions come at the same time. For left turn sounds 'go left'; for the right you hear 'go right'. Straight ahead sounds 'go straight ahead'.
- 9.13 The tactile and audible instructions are given as close as possible to the decision point, but always before the decision point is passed. This built-in safety margin - necessary to compensate for inaccuracy of the GPS signal - may mean that these instructions are already given a few meters before reaching the actual decision point.
- 9.14 Multiple directional indications shortly after each other must also be followed in that order. The indication 'go straight' immediately followed by 'turn left' should be interpreted as ' go first straight ahead and then immediately left '.
- 9.15 The tactile arrow does not help you to turn or cross a bend. You can do this as you are used to, by using the natural guide line , the curb, traffic noises , a zebra or pedestrian crossing, echo location or if necessary with the help of third parties. It is best to ignore the tactile arrow in that situation and to rely entirely on your own perception.
- 9.16 The directional change of the tactile arrow is canceled after 10 seconds. The tactile arrow will then turn back to 12:00, regardless of whether you have started the new direction or not . A spoken message follows with information about the distance to the next direction change to the left or right. This instruction can be used to walk directly or later on the good side of the road.
- 9.17 The same procedure is repeated for each subsequent decision point. Over time this will become increasingly self-evident for you and the uncertainty about the route to be followed will be reduced to a minimum. Of course, care for your own safety remains on the sidewalk and when crossing. Because the I- Cane Mobilo<sup>®</sup> has the appearance of a traditional touch cane or recognition cane, the environment and traffic will not respond to you differently than you are used to . So stay alert and use your knowledge and experience with traffic. You were and remain responsible yourself for your safety with the I- Cane Mobilo<sup>®</sup> and I- Cane Go<sup>®</sup> .
- 9.18 Upon reaching the destination, the tactile arrow makes the movement from a windscreen wiper (2x). The spoken message is: "you are close to your destination". The program does not state which side the destination is on.
- 9.19 The navigation program must be turned off manually . This to ensure that there a notification can be given if you pass the destination. This message contains the number of meters that you are removed from your final destination. That

number increases as you go far and decreases as you approach your final destination again.

## **10. Deviating from the route (off route)**

- 10.1 If you deviate from the route, you will hear audible and tactile instructions to go back ('go back') to the point where the planned route was abandoned. The tactile arrow turns 3 times to the left quickly and returns slowly . This indication does not come immediately if a wrong direction is used to prevent incorrect reports. Only when the program is sure, the instruction follows: "go back".
- 10.2 If you turn around to the last decision point, new instructions will follow to get back to the 'straight' path. The program first reports 'continue' as confirmation you are back on the planned route ' '.
- 10.3 This off-route support can be complicated by GPS shortcomings or complex pedestrian situations.

## **11. Instructions for use of the I- Cane Mobilo® in bad weather**

- 11.1 The I- Cane Mobilo® is splash-proof and can therefore also be used in rainy weather.
- 11.2 The I- Cane Mobilo® can not be used under water .
- 11.3 In case of heavy rainfall, some water may remain in the housing of the tactile arrow and the sensor. Allow this to drain by turning the handle. At a later time, carefully dry the parts with a clean and dry cloth.
- 11.4 Also the grip of the handle can become moist. This dries the best in a dry and ventilated area.
- 11.5 In bad weather (rain, fog) in combination with dusk / dark, every pedestrian is less visible to the traffic, even when crossing. Take extra time when crossing and make sure you are seen well, also through adequate use of the cane.
- 11.6 Every cane behaves differently in the snow, including the I- Cane Mobilo® . Curbs in particular are less easily noticed and commuting the cane takes more effort. Take this into account when planning a route.
- 11.7 When the wind is strong, the sonar sound of the sensor can blow away, making it difficult to detect and display height obstacles.

## **12. Solve problems**

- 12.1 Connection with the handle fails.  
Restore the connection by reconnecting the handle with the navigation program , see chapter 7.
- 12.2 Program ( App ) does start.  
Switch your smartphone off completely and start it again as also I-Cane Go<sup>®</sup> app.
- 12.3 GPS reception insufficient to record route or to start .  
Make sure you are outside and that your view of the sky is not impeded by large trees or canopies. Make sure your smartphone or Mobilo is not blocked by other objects.
- 12.4 Charging failed .  
Check the correct connection between the USB power plug on the handle and to the power supply. If this does not help, contact the service organization.
- 12.5 Tactile arrow turns , does not tilt or does not tilt sufficiently.  
Start the I- Cane Mobilo<sup>®</sup> and the navigation program again and check the function again. If this does not help, contact the service organization.
- 12.6 Warning sound is missing .  
Check the setting on / off of the obstacle warning in chapter 8 . If this does not help, contact the service organization.

## **C. Contact**

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