

User's Manual

Intelligent Mobility Cane

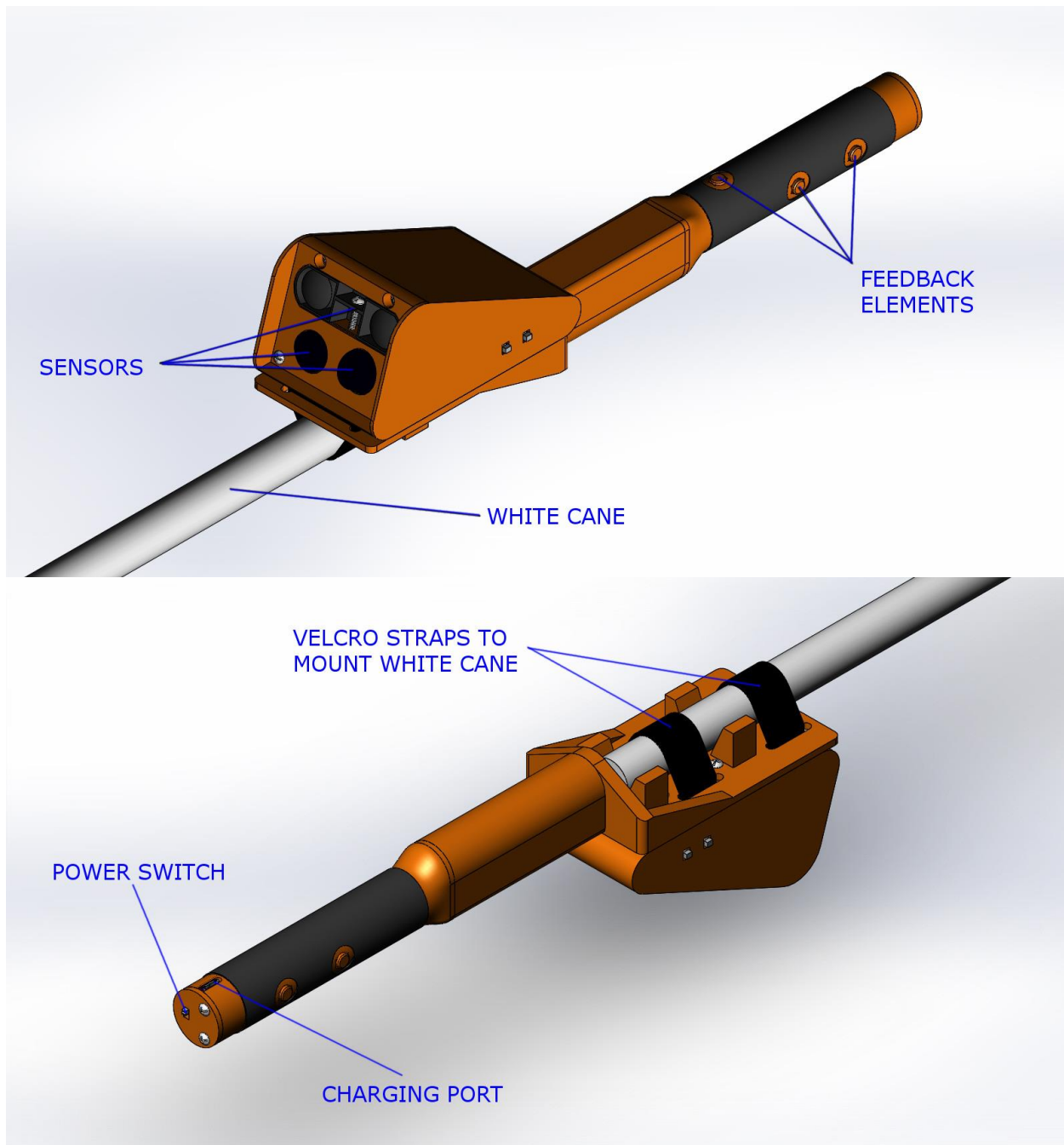
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Overview

Intelligent Mobility Cane at a Glance



Intelligent Mobility Cane Feature Overview

The Intelligent Mobility Cane is a detachable cane handle with sensor module that serves to modify a standard white cane into a “smart” cane that has a detection range that extends past the user’s direct sweep. Unlike other smart canes, the Intelligent Mobility Cane can detect obstacles, overhangs, and drop-offs in front of the user via the utilization of ultrasonic and infrared sensors. Three motors in the portion of the handle grasped by the user provide vibrational feedback correlating to the type of object(s) detected by the system.

Charging

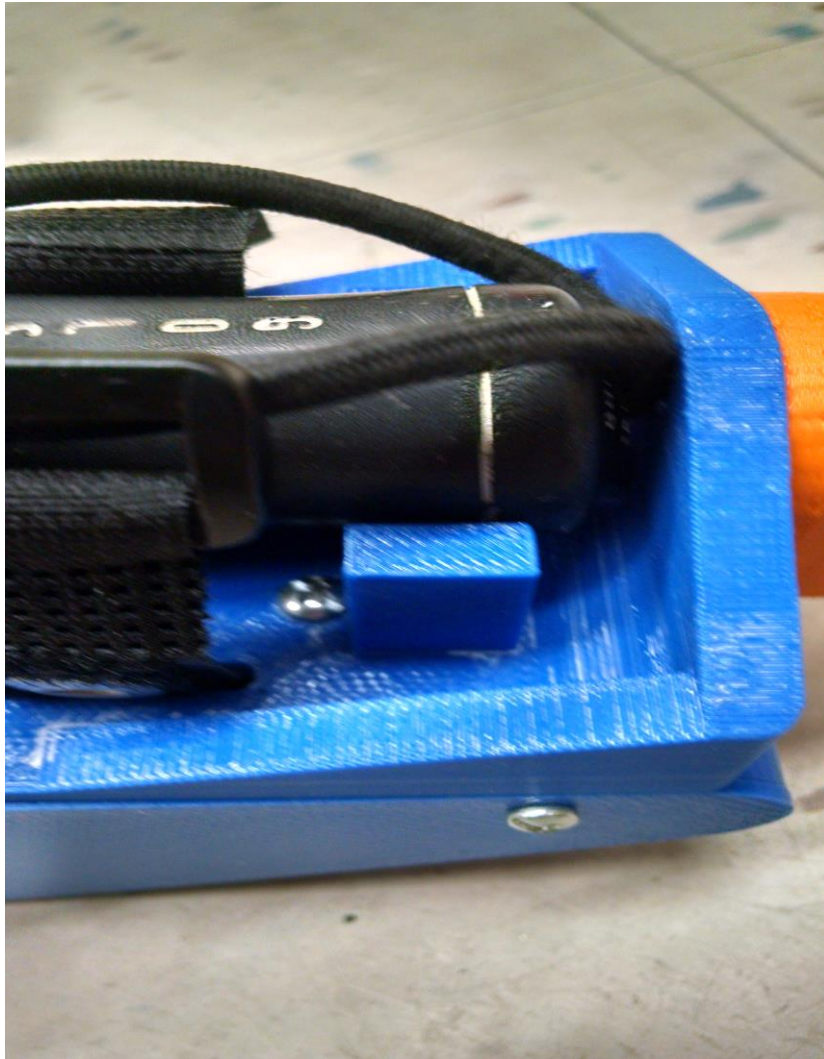
- To charge the Intelligent Mobility Cane, first locate the micro-USB port on the left side of the upper portion of the handle, near the haptic feedback motor closest to user's body.
- Plug the provided power cable into the micro-USB port on the cane.
- Plug the provided power cable into a standard wall outlet (120 VAC).
- The amount of time needed to charge the cane to full power will depend greatly on the state of the battery when set up to charge. On average, a battery that has been completely drained to point at which the cane will no longer turn on will take approximately 3 hours and 15 minutes to charge to full capacity. However, typical use of the cane will result in consumption of approximately 55% of the battery charge; hence resulting in a charge time of 1 hour and 45 minutes for full capacity.
- When done charging, remove the power cable from the cane, and then from the wall.

Mounting

1. Prepare white cane to be mounted. Join sections together if appropriate.
2. Prepare Intelligent Mobility Cane (IMC). Put the bottom side with Velcro straps facing up and open the straps.



3. Place the white cane onto the IMC. Make sure the white cane rests firmly on the four supports, the Velcro straps are able to go around the white cane, and that the white cane is as far back (close to the IMC handle) as possible. If the white cane has a string, put the string on the side opposite the IMC.



4. Secure the Velcro straps. Feed the end of the strap through the loop. Pull the end until the strap is tight, then fold it onto itself to secure it.





5. Ensure that assembly is secure by gently flexing the joint in all directions.

General Use

Interpreting Feedback

Multiple vibration patterns have been implemented to notify the user of different conditions.

1. When the Cane is initially Powered on, all three motors will pulse 5 times in phase. The cane will then begin normal operations
2. When a drop-off is detected within 7feet, the thumb vibrator will begin pulsing
3. When a below waist object is detected the middle vibrator will begin pulsing
4. When an above waist obstacle is detected the vibrator closest to the body will begin pulsing
5. If a wall, or large object is detected, both the object and overhang vibrators will pulse
6. If the Cane is low on battery all motors will pulse in phase until the cane shuts off automatically
 1. In this case the cane must be recharged in order to restart usage.

Toggling Power

Turning Your Cane On

- Allow the cane to touch the ground in front of you in a flat open space (at least 7 ft to nearest obstacle).
- Locate the power switch on the back of the handle and slide it into the 'ON' position (right).
- All three vibrators will vibrate with five quick pulses to indicate the cane has just been turned on.
- Hold the cane steady until the motors stop pulsing in phase (The cane is calibrating the drop off detector during this period).
- Once the motors have stopped vibrating the cane can be used as norm

Turning Your Cane Off

- Locate the power switch on the back of the handle and slide it into the 'OFF' position (left).
- No vibrations occur when switched off, if vibrations occur, the cane has just been switched on.

Maintenance

Cleaning the Intelligent Mobility Cane

General Care

- For everyday care, use a damp cloth to wipe down all surfaces of the cane.

Blemishes/ Spills

- Spray a cloth with a small amount of all purpose cleaner and gently wipe cane. Avoid spraying directly on cane surface.