

SmartCane™ Device



What is SmartCane™ ?

SmartCane™ device is an electronic travel aid which fits on the top fold of the white cane. It serves as an enhancement to white cane and overcomes its limitations by detecting knee above and hanging obstacles. For safe mobility, it is important that such obstacles are detected early. The cane has other uses as a spatial awareness device as it can detect presence/absence of objects in the surroundings.

Further, as compared to the white cane, the detection distance is increased from 0.5 meters to 3 meters. It informs about the presence of objects before actually touching the object with the cane and thus helps in preventing unwanted contact. This avoids socially awkward situations like collision with people while walking or unsafe collisions with animals or into trash.

SmartCane™ device uses ultrasonic ranging to detect objects in its path and generates tactile output in the form of different vibratory patterns. These vibrations convey the distance information and thus enable the user to negotiate the obstacles from a safe distance. With simple orientation and training, any visually impaired person who is a regular user of the white cane for mobility can benefit from this device.

Key Device Features

- Adjustable detection range: 3m (outdoor) and 1.8m (indoor)
- Sensors can detect a 3cm wide pipe from 3m distance
- Intuitive and distinctive vibration patterns indicating obstacle distance
- Ergonomic grip for comfortable holding and cane tapping
- Adjustable sensor mechanism for use by persons of different heights
- In-built rechargeable battery-10 hrs battery back up and easy charging
- Can be easily attached/detached from a compatible White cane
- Conforms to international quality standard-CE, ISO 9001:2008

What SmartCane™ users say ?

"The SmartCane device is very beneficial. It protects me from a lot of upper body injuries which I earlier used to encounter on a daily basis while using the regular White cane".

- Satguru Rathi, New Delhi

"The device detects obstacles which was earlier not possible with White cane. This device has made us smart just like its own name."

-Riddhi, Ahmedabad

"It feels great to be able to move around alone. I no more need to hold anyone's hand for my mobility. I can just be myself. Family and friends now have the confidence in me that I can travel independently without getting hurt or injured."

- Indirani Sankari, Mumbai

"My initial experience with the White cane was like gosh! And now with Smart cane it's like wow. I walk faster and am more confident now. Just one word for the device: It's wonderful!"

- Manju Magoo, Mumbai

"Since the time I have started using Smart cane I am not getting injured these days. My safety in travel has increased by a great deal."

- Ketan, Ahmedabad



Why SmartCane™ ?

Smartcane™ ensures independent mobility, safety and gives confidence as it

- Detects hazardous, raised knee-above obstacles
- Gives pre-warning of obstacles and allows path finding without collision
- Reduces injuries and awkwardness of collision during mobility

Smartcane™ is easy to use as it

- Enhances White cane use
- Has a convenient ergonomic grip
- Is tested for robust and reliable use



How much does the SmartCane™ cost?

The SmartCane™ device is expected to be released in March 2014 and will be priced at Rs. 3,000/- in India. Note that comparable devices available internationally cost Rs. 65,000/- and above. Major research efforts have been undertaken to develop a user friendly device at an affordable price.

How will the device be made available?

Saksham Trust will work together with partner welfare organizations for making this product available as well as providing orientation training across the country. Further contact details of the partner organizations along with their role will be published soon.

How was the SmartCane™ developed?

The SmartCane™ has its genesis as a student project at IIT Delhi and was initially supported by Media Lab Asia. Subsequently, Wellcome Trust, UK funded a joint effort by IIT Delhi, Phoenix Medical Systems Pvt. Ltd., Chennai and Saksham Trust, Delhi for translational research that included extensive validation under "the Affordable Healthcare Scheme". A large number of users and organizations working for the people with visual impairment have contributed towards the development of this device through their valuable feedback.



Contact Information

Saksham Trust

486 Double Storey, New Rajinder Nagar, New Delhi – 110 060, India

Website:

www.smartcane.saksham.org

Email:

smartcane@saksham.org

Phone No:

+91-11-64650655, 42411015,
45793601

Fax:

+91-11-28744025

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