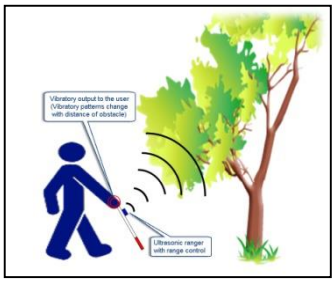
SMARTCANE

An Affordable Knee above Obstacle Detection and Warning System

Smartcane is a mobility aid that detects knee-above and raised obstacles, which are not detected by the use of the white cane. Since the device uses ultrasound, it increases the obstacle detection range to 3m, thereby improving safety for the blind user. The device fits on the top fold of the white cane and provides information in addition to that given by the white cane.

It helps to detect knee-above obstacles which are usually not detected by the white cane like the underside of a car, hanging cloth strings, coolers and A/C etc. These obstacles usually pose injury to the head or upper body parts and thus are critical to detect early.



It increases the range of detection from half meter to 3 meters. Thus it informs about the presence of obstacles much before touching the actual obstacle. An object as big as a wall and as small as a cloth string can be detected from a distance of 3 meters. So collisions can be avoided.

The device also helps in preventing unwanted contact like colliding with people while walking or bumping the cane into trash.

It can be used to find a clear path to navigate by detecting obstacles on the way.

Salient Features

- Improves mobility, gives independence & boosts self- esteem.
- Also useful for individuals with deaf-blindness.
- System designed as a detachable unit mounted on a white cane. Low-cost and replacable white cane makes it affordable and easy to use in developing countries's road conditions.
- Design features: user-detachable, light-weight, Braille controls and an ergonomic design to allow the user to hold the SmartCane with a variety of personalized grips.
- Detection and warning of fast-approaching obstacles, like vehicles, within 3m allowing time for a reflex action.

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Recent Developments

- Rigorous field trials conducted at six different locations across the country.
- Trial locations are selected to encompass social, economic and geographical diversity.
- Current Phase of trials will include more than 100 users across the country to validate and maximize the reach of the product.
- Product expected to be launched by the end of this calendar year

Publications/Awards

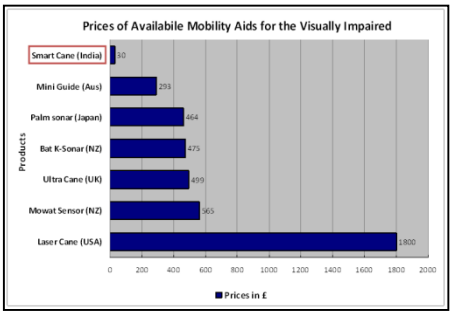
ASSITECH group paper on "Smart Cane for the Visually Impaired" gets the Peter Chan Best Paper Award at TRANSED 2010 in Hong Kong held in June 2010

Paper on Smartcane published at TRANSED 2007, Montreal, Canada in June 2007

Innovative Student Project Award, Indian National Academy of Engineering (INAE), 2008 [National Award]

Best Industry Relevant Research, Forum for Innovation and Technology Transfer (FITT), IIT Delhi, 2008.

IIT Delhi Alumni Association Award, 2007.



User Testimonials

"Present navigation devices are extremely expensive and therefore, never reached the general population. At least 100 thousand persons can benefit from such device in India alone. Government schemes and organizational distribution system can take this device to end users of all economical backgrounds."

Mr. Dipendra Manocha,
National Association for the Blind

"On the road side itself: the device could detect presence of auto or any other parked vehicle from a distance of about 3m. The device could also detect a ladder leaning against a wall. It is as if I can see things before colliding or getting hurt."

Mr. Yogesh Taneja,
National Association for the Blind