

A 'smart cane' for the visually impaired

Navadha Pandey

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After smartphones and smartcards, here comes the SmartCane – a home-grown, affordable electronic device for the visually impaired.

The ultrasonic device, launched by IIT Delhi on Monday, can be fixed on the top fold of the white cane to detect obstacles above knee-level at a distance ranging from one metre to three metres. Its carrier is alerted by different vibratory patterns.

Under the institute's Assistive Technologies Group (ASSISTech), the electronic mobility aid for the visually impaired was developed jointly with Saksham Trust and Chennai-based Phoenix Medical Systems, with ₹3-crore funding from Wellcome Trust of the UK.

The product's USP is its low cost of ₹3,000, inclusive of training and distribution costs. IIT Delhi Director R K Shevgaonkar said, "This product is an example of India-centric research in terms of affordability and what the society needs. The cost of this product is one-tenth of similar devices available in the international market."

Rohan Paul, an IIT Delhi alumnus whose team is behind the product, said, "this has been a nine-year-long journey. The project started out as a course under Prof Balasubramaniam at IIT Delhi. Dipendra Manocha, Director of Saksham Trust and Delhi-President of National Association of Blind, highlighted the need for mobility, which is a fundamental need, and the fact that there has been no innovation in this field for so long."

The technology was then transferred from IIT Delhi to Chennai-based Phoenix Medical Systems for just Re 1. Phoenix is responsible for manufacturing the device.

On how the team managed to keep the cost so low, Paul said, "You begin with affordability as a goal. Use low-cost electronics, easy sensors, no fancy vibrations and look at lifecycle cost. The product should be high-quality and should not break for five years, and its repair costs should be low. Then, you highlight the product within the research community to ensure that the production cost is borne by the State or philanthropy."

Chirag Gambhir, a second year student at Sri Venakteswara College, Delhi University, said, "My brother has been using the SmartCane for some time now. Because the technology is simple, one can easily switch from the white cane to SmartCane."

Meanwhile, the Government has started procurement of the device. Paul said around 1,000 units had been ordered under the Scheme of Assistance to Disabled Persons under the Ministry of Social Justice and Empowerment. "Apart from this, we have 20 community partners in 10 states for dissemination of these canes. With their feedback, we will start scaling up," he added.

According to the World Health Organisation, 285 million people are estimated to be visually impaired worldwide, with 90 per cent in developing countries. India is home for 12 million people with blindness, the largest for any country in the world (2011 census data).

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