

GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH
RAJYA SABHA
UNSTARRED QUESTION NO.2525
TO BE ANSWERED ON 24.03.2022

DEVELOPMENT OF DIVYA NAYAN BY CSIR

2525 SHRI K.R.N. RAJESHKUMAR:

Will the Minister of Science & Technology be pleased to state:

- (a) The details and the features of 'Divya Nayan' a device developed for the visually impaired by the Council of Scientific and Industrial Research (CSIR);
- (b) Whether the said device has been made available for the common man;
- (c) Whether CSIR has also developed such other devices which benefit the common man; and
- (d) If so, the details thereof?

ANSWER

THE MINISTER OF STATE (INDEPENDENT CHARGE) OF THE SCIENCE AND
TECHNOLOGY AND EARTH SCIENCES
(DR. JITENDRA SINGH)

- (a) Sir, the details and the features of 'Divya Nayan' a device developed for the visually impaired by the Council of Scientific and Industrial Research (CSIR) are as below;

Divya Nayan is a personal reading machine for visually impaired developed by CSIR-Central Scientific Instruments Organisation (CSIO), Chandigarh where any printed or digital document can be accessed in the form of speech output. Based on the principle of contact scanning, it can analyse a multi column document and provide seamless reading. User can place the device over the document to be read and manually scan it. The reading device uses language dependent optical character recognition to convert the image into text and a text to speech converter, further converts the text into audio. Audio files are stored in the machine and can be listened back. The device is handheld, standalone, portable, completely wireless and IoT enabled. It is currently available in Hindi, English, Bengali, Telugu, Tamil, Kannada, and Punjabi but is further compatible for other Indian and foreign languages. It has interfaces such as USB, Bluetooth, Wifi, LAN, Headphone etc. The salient features of the device are as below:

Feature/s:

- Wireless and Portable - standalone, completely wireless and IoT enabled;
- Multifunctional – read printed, e-books, e-news, recording and reading speech;

- Multilanguage - currently supports Hindi, English, Bengali, Tamil, Telugu, Kannada and Punjabi;
 - Online Processing – document batch processing organisation;
 - Document Storage – sync document;
 - Page orientation detection and correction;
 - Capable of reading Multi-Column document;
 - Rechargeable lithium ion battery; and
 - Internal memory of 32 GB for document storage
- (b) Yes, Sir. The device had been made available to the visually impaired individuals and institutions through an online registration and booking portal on its website <https://divyanayan.csio.res.in/>. Further, 31 numbers of trainings cum workshops have also been conducted in various Indian states. Moreover, the technology has been transferred to Central Electronics Limited (CEL), Sahibabad as an industrial partner for manufacturing and marketing. The first 100 numbers of Divya Nayan were manufactured and supplied to CSIR-CSIO by CEL. The Divya Nayan sale price was around Rs. 24,000/- per piece.
- (c) Yes, Sir; and
- (d) Some of the such other significant devices developed by CSIR for the benefit of the common man are as below:
- Myoelectric Hand for the persons having below elbow amputation;
 - Electronic Knee for the persons having above knee amputation; and
 - Electronic Control Module for powered wheelchair.
