

**GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH**

**LOK SABHA
UNSTARRED QUESTION NO. 4024
(TO BE ANSWERED ON 19.03.2021)
DIVYA NAYAN FOR VISUALLY IMPAIRED**

4024. DR. MANOJ RAJORIA:

Will the Minister of SCIENCE AN TECHNOLOGY विज्ञान एवं प्रौद्योगिकी मंत्री be pleased to state:

- (a) the details and the features of 'Divya Nayan' a device developed for the visually impaired by 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

**MINISTER OF HEALTH AND FAMILY WELFARE; MINISTER OF SCIENCE AND TECHNOLOGY; AND MINISTER OF EARTH SCIENCES
(DR. HARSH VARDHAN)**

- (a) Divya Nayan is a personal reading machine for visually impaired developed by CSIR-Central Scientific Instruments Organisation (CSIO) 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 technology are as below:**

Feature/s:

- i. Wireless and Portable - standalone, completely wireless and IoT enabled;**
- ii. Multifunctional – read printed, e-books, e-news, recording and reading speech;**
- iii. Multilanguage - currently supports Hindi, English, Bengali, Tamil, Telugu, Kannada and Punjabi;**
- iv. Online Processing – document batch processing organisation;**
- v. Document Storage – sync document;**
- vi. Page orientation detection and correction;**
- vii. Capable of reading Multi-Column document;**
- viii. Rechargeable lithium ion battery; and**
- ix. Internal memory of 32 GB for document storage.**

(b) Yes. The device is currently in the process of distribution and availability to the visually impaired individuals and institutions through an online registration and booking portal <https://divyanayan.csio.res.in/registration.php> on its website. Additionally, 31 numbers of trainings have also been held in various Indian states.

(c) Yes.

(d) Some of the such other significant devices developed by CSIR for the benefit of the common man are as below:

- i. Myoelectric Hand for the persons having below elbow amputation;**
- ii. Electronic Knee for the persons having above knee amputation;**
- iii. Electronic Control Module for powered wheelchair; and**
- iv. 3D Printed Orthosis for children with congenital hemiparesis.**
