

UDC 630.179.14

DEFECTOSCOPE BASED ON MODERN MOBILE DEVICES

Petryk Valentyn, Protasov Anatolii

National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute», Kyiv, Ukraine

E-mail: vafepet@gmail.com

Wireless data transfer technologies are now used in all technical fields, from mobile phones to automotive vehicles. Wireless network technology is also widely used in non-destructive testing [1].

In non-destructive testing, the transmission of data over short distances takes place using wireless networks, usually used by Bluetooth [2,3]. However, there are exceptions like GSM / HSPA. Sometimes there is a need to combine these technologies in one device. This problem can be solved by using a separate sensor with a Bluetooth module and a Smartphone. The sensor implements the collection of primary information about the object of testing and data transmission over short distances as separate packets of data collected over a certain period of time, and in the mode of Real-time. The Smartphone both receives a data packet from the sensor and processes the monitoring results “on site”, or uses GSM technology transmits processed data to generate a report or draw up a testing map.

Sometimes, modern Smartphones outperform the computing capabilities of some computers. In addition, the use of such a mobile platform has advantages that are more significant. Modern Smartphones allow you to use not only Bluetooth and GSM, but also Wi-Fi and more advanced and safer HSPA and LTE data transfer protocols. Also the great advantage of this approach is the possibility of updating the defectoscope software "by air".

At the moment, the development of the sensor with the Bluetooth module has already been completed and software development for the Smartphone is underway. There is plan to implement not only the data transfer between the Smartphone and the server, but also add the ability to synchronize multiple devices with each other and interact with cloud storage.

Keywords: eddy-current flaw detector, telemetric communication channel.

Reference

- [1] Петрик, В.Ф. Использование беспроводных технологий в дефектоскопии / В. Ф. Петрик, Г.М. Ковтун, Д.М.Топиха // Ж-л «Научни Известия НТСМ»: материалы международной конференции «Дни НК 2014». - Созополь, 2014. - № 150 - С. 486-488.
- [2] Протасов, А.Г. Вихрострумовий дефектоскоп з телеметричним каналом зв'язку / А.Г. Протасов, К.М. Серий, О.Л. Дугін, В.Ф. Петрик // Вісник НТУ "ХПІ". - 2014 р. - № 19. – С.132-139.
- [3] Povshenko, O. Portable Ultrasound Flaw Detector / O. Povshenko, V. Petryk, A. Protasov // Неруйнівний контроль в контексті асоційованого членства України в Європейському Союзі : матеріали 2-гої науково-технічної конференції, Польща, м. Люблін, 15-19 жовтня 2018 року. - Люблін, Польща, 2018.- С. 34-36.