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The Development of Electronics Telecommunication Remote Laboratory Architecture Based on Mobile Devices

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ABSTRACT

This paper will discuss the results of research on the development of remote laboratory architectures for electronics telecommunications courses based on mobile devices. The background of study for the development of this system is to meet the demands of the world of education in the era of the industrial revolution 4.0 and the needs for online learning that is caused by the Covid-19 pandemic. Besides, with the development of cellular communication technology and mobile devices that have PC-level capabilities, mobile devices can support remote laboratory development. The design of remote laboratory system is based on an embedded system consisting of a user management server based on the Raspberry Pi 4 and an instrumentation system using Red Pitaya. Remote Laboratory applications can be accessed using mobile devices such as Android based smart phones or tablets. The aim of the development of this remote laboratory is to complete remote experiment activities in electronics telecommunications courses in the Electrical Engineering study program.

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