DESIGN AND BUILD AN AUGMENTED REALITY-BASED 3D SANDBOX MAP DESIGN FOR MAP SIMULATION IN EXERCISE OPERATIONS TASKS EQUIPPED WITH ANIMATION AND LIVE STREAMING SERVICES (WEBRTC)

Abstract

In the era of transformation, today's innovations are rapidly developing, one of which is technological advances in the military sector, such as Augmented Reality-based 3D Sandbox maps equipped with character animations and live streaming services (WebRTC) which function to improve the training performance of military soldiers, facilitate the provision of operational orders and facilitate monitoring by the top command. In society, it can also be useful for the educational process. Augmented Reality (AR) is a 3D visual object technology that can be connected to computers and mobiles. WebRTC is an HTML5 specification that allows users to improve communication in real-time directly from the browser to other devices. WebRTC easily makes it easier for us to carry out communication using video and voice directly within the website page without having to install any plugins. The research method used in this study is a real experimental research design. Experimental studies examining the effects between the treated group (experimental group) and the control group (not given the treatment) were then compared between the two. The expected results of the research on the design and construction of the design of 3D sandbox maps based on Augmented Reality (AR), namely maps in military exercises are equipped with character animations and live streaming services (WebRTC) to improve combat simulation tools from manual to digital in the form of more efficient visual viewmaps. There was a clear difference in technological progress from the experimental group (given treatment) compared to the control group (not given treatment). Technology needs to be updated more sophisticatedly in order to achieve optimal in the process of its use and operation so as to improve the professionalism of training and produce great soldiers.