

## ABSTRACT

The utilization of Lightweight Fire Extinguishers (APAR) is an essential skill in initial fire management efforts. With technological advancements, the use of Mixed Reality (MR) in training offers an innovative solution that provides a more immersive and effective learning experience. This final project develops a Mixed Reality-based APAR usage simulator designed to enhance understanding and skills in using APAR among the community.

The simulator presents realistic virtual fire scenarios, allowing users to practice using APAR safely without risk. This project includes user needs analysis, application development planning, user interface design, and system architecture. The application testing results show significant improvement in participants' understanding and skills in using APAR. This study highlights the great potential of using Mixed Reality in APAR training, offering a more effective and engaging method for fire safety education.

**Keywords:** Lightweight Fire Extinguisher, Mixed Reality, Simulator, Fire, Technology.