INTERNATIONAL MULTI-AWARD WINNING INSTITUTION FOR SUSTAINABILITY

THE USE OF AUGMENTED REALITY IN TABLETOP EXERCISE FOR DISASTER PREPAREDNESS TRAINING: A DESCRIPTIVE ABSTRACT

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INTRODUCTION

- As we navigate the landscape of preparedness, response, and strategic planning for disaster preparedness training, augmented reality (AR) emerges as a groundbreaking tool, revolutionising how we simulate, train, and envision disaster scenarios.
- AR becomes a valuable tool in disaster preparedness training such as tabletop exercises (TTX) that enhance the exercise by overlaying digital information and virtual objects.[1,2,3]
- AR was found to be possible and compact enough to incorporate into training settings through personal devices like mobile phones or computers.[4]
- Hence, the aim is to develop an application using AR to be used during the tabletop exercise.

MATERIALS AND METHODS

- The data is collected through interviews on the opinions and views of the experts from five main agencies in disaster response, discussing their duties during a flood scenario.
  - National Disaster Management Agency
  - Royal Malaysia Police
  - Fire and Rescue Department of Malaysia
  - Ministry of Health
  - Malaysia Civil Defence Department
- The consensus was achieved after a series of interviews with the experts, including document reviews guided by National Security Council Directive 20.

RESULTS

- The AR approach is created through 'marker-based' which uses image recognition to build up an engaging 'storyline' of a flood scenario.
- It includes the updates on the changing plot during the exercise using an 'inject' meant to progress the plot and provide fresh data to evaluate and react to.
- The proposed flow chart for the exercise is at the stage of finalising the steps and graphic parts.
- Now, it is at the early stage of transforming the scenario into AR.

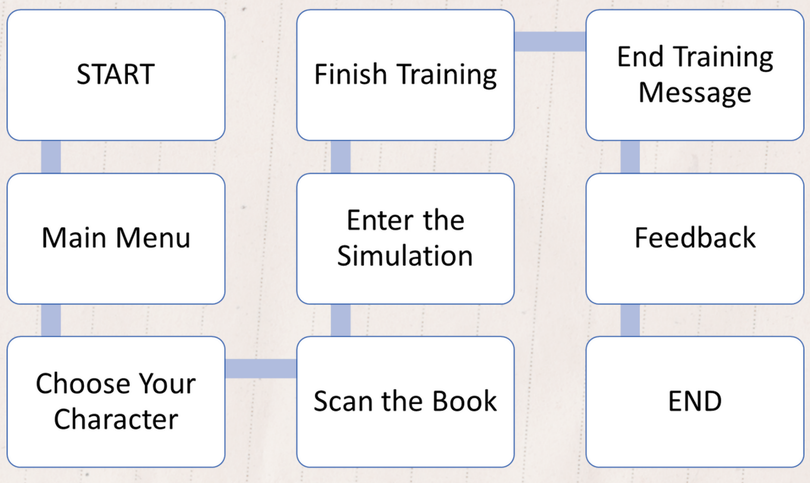
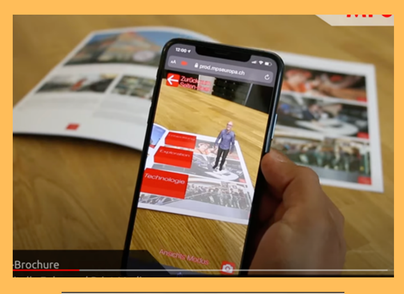


Figure 1: Recommended flow chart after discussion with the agencies



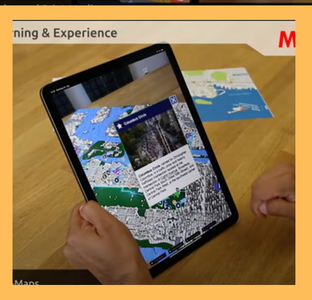


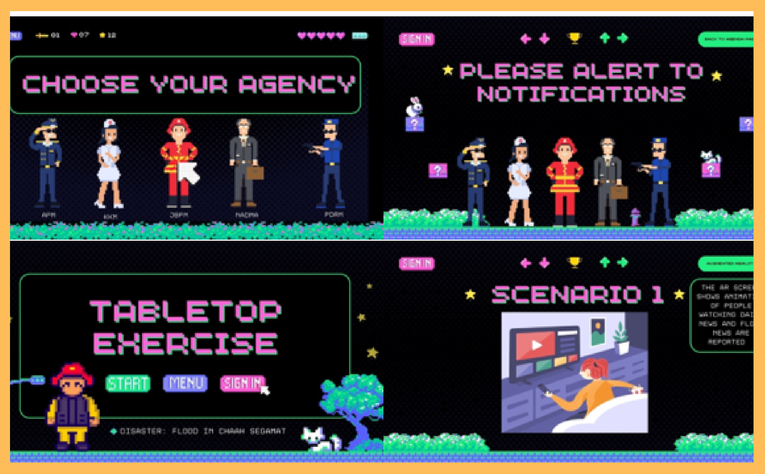
Figure 2: Example of marker-based (Source: MPS Europa)

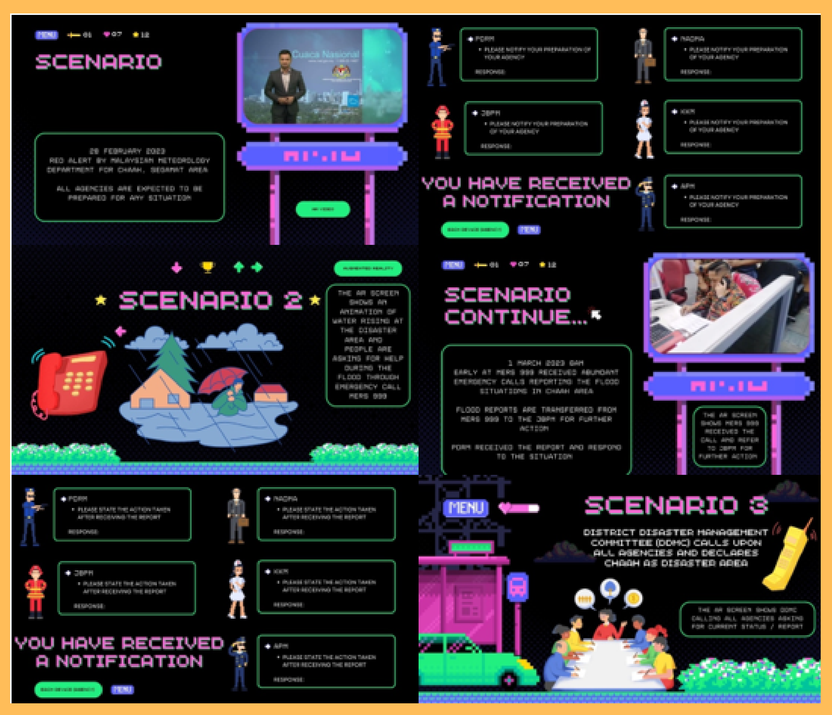
DISCUSSION

- Integrating virtual objects and entities into the tabletop exercise is made possible by AR.
- AR catapults us into dynamic, interactive environments where hypothetical situations spring to life, engaging our senses and intellect in unprecedented ways.
- Through AR, tabletop exercises cease to be merely theoretical discussions but evolve into immersive experiences where teams collaborate, problem-solve, and adapt in a hyper-realistic environment, revolutionise how disaster responders are trained.

"WELCOME TO THE FUTURE OF IMMERSIVE TABLETOP EXERCISES!

Figure 3: Proposed preliminary idea on AR approach





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