ASSIGNMENT 2 - Feasibility Study

GROUP MEMBERS

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ABSTRACT

This study was conducted to determine the feasibility of the ARES (Augmented-Reality Environment Tactical Scanner) system. The study finds its basis in historical research and private consultations from real-world NATO military personnel of high ranks. A descriptive survey was conducted beforehand, in which a previous draft of the document was provided to said personnel, ranking from Lieutenant-Colonel to 2-Star Generals, who were sourced from personal networking. The survey had shown that modern militaries had already begun research and development on similar systems, such as the US Armed Forces' IVAS (Integrated Visual Augmentation System) or the Russian Army's RATNIK integrated exoskeleton rig. This indicated that ARES is very much feasible, at least toward the prototype stage, given the limited resources at hand.

As the initial prototype is already available, the team has decided to proceed with its continued development and further refinement of ARES' algorithms and data-models.

INTRODUCTION

1.1 The rapid advancements in technology to a more digital-oriented environment had resulted in unexpected evolutions in all aspects of human society, including the field of warfare. The post-2010 years had seen an increase in the trend of weapon-system automation and electronic warfare, as well as a renewed interest in the deployment of military robotics. A number of these state-of-the-art systems had been implemented into military units at a brigade or division-level either for testing prototypes or direct usage from mass-production lines.

1.2 The US Armed Forces, in particular, have experienced a shift toward the centralization of its command structure, mobilization of mechanized infantry carrying lighter equipment, and the enhancement of their performances through integrated digital electronics such as smart computer technology and stealth-based capabilities. This is highlighted with the public release of the first iterations of F-35 jet fighters for the Air Force, directed-energy weapons and responsive fire-control for the Navy's point-defense guns, and the IVAS heads-up display mod for Army and Marine helmets.

1.3 The Augmented-Reality Environment Tactical Scanner, dubbed ARES, seeks to join the fray. It is an augmented reality-based expert system that analyzes and identifies potential hostiles (OPFOR) based on a number of external factors to cross-check with an internal database. Said factors include, but are not limited to, national identity, military / paramilitary equipment, and weaponry type using shape detection, body scanning, and precise geopositioning.

DISCUSSION

2.1 …