

MASTER OF SCIENCE IN INFORMATION SYSTEMS AND OPERATIONS

A WIRELESS LOCAL AREA NETWORK COMMAND AND CONTROL SYSTEM FOR EXPLOSIVE ORDNANCE DISPOSAL INCIDENT RESPONSE

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Navy Explosive Ordnance Disposal (EOD) teams currently use a hardwire intercom system for command and control when responding to EOD incidents. This system is archaic, awkward, and cumbersome. A modern information system will greatly improve safety and efficiency during EOD operations. This thesis presents a lightweight, ruggedized, field portable, wireless local area network (LAN) designed for use by U.S. Navy EOD teams during EOD incident responses. The information system provides a voice, video, and data link between the command post and the down range response team, thus offering significant improvements over current EOD command and control methods. The system components are commercial off the shelf technology (COTS) and are chosen based on specification analysis for performance, reliability, availability and cost. Calculations for traffic flow analysis, electromagnetic radiation (EMR) levels, and theoretical range are provided. Based on the new capabilities provided by the system, revised response tactics for EOD teams are proposed that allow multiple render safe procedures to be conducted simultaneously by a single team, thus providing a quantum leap in efficiency.

