

MASTER OF SCIENCE IN SOFTWARE ENGINEERING

DECISION SUPPORT FOR SOFTWARE PROCESS MANAGEMENT TEAMS: AN INTELLIGENT SOFTWARE AGENT APPROACH

Lori A. Church-DoD Civilian

B.S.E.E., San Diego State University, 1992

Master of Science in Software Engineering-March 2000

Advisors: J. Bret Michael, Department of Computer Science

**John S. Osmundson, Command, Control, Communications, Computers, and
Intelligence Academic Group**

Currently, SPAWAR Systems Center is lacking a unified software development environment that would assist software developers to effectively manage software development projects, across a heterogeneous development environment. This unified environment is needed to provide up-to-date accurate information to the right people at the right time, increase the process knowledge base, increase productivity, decrease time-to-market, eliminate redundancy, and ease job stress.

This thesis proposes a conceptual model for software process management decision support in the form of an intelligent software agent network. The intelligent software agent network, called MENTOR, provides the knowledge base that is integral to the software development team, providing for a repeatable, defined, managed, and optimized development environment. This concept provides SSC software development managers and team members with the ability to work in a unified and collaborative environment, regardless of organizational diversity or location.

MENTOR will be utilized as an integral software development team member, providing tutorials and mentoring capabilities for management and process assistance, as well as providing process planning, risk analysis, and strategic planning recommendations for the successful completion of a software development effort at all team levels. In addition, MENTOR will provide an effective communication environment that will enable the development team to minimize the time consuming workload involved in tracking individual tasking.

DoD KEY TECHNOLOGY AREA: Computing and Software

KEYWORDS: Software Intelligent Agents, Software Management, Software Process Guide

