

MASTER OF SCIENCE IN SOFTWARE ENGINEERING

RE-ENGINEERING OF A MISSION CRITICAL SATELLITE COMMUNICATIONS COMPONENT TD1271B/U

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Legacy software in general, and in the DoD environment in particular, presents an ever-growing maintenance challenge to program managers. The software is cumbersome, written in arcane languages and hosted on aging technology hardware. One of the options that is available to the program manager to alleviate this problem is to re-engineer the existing software product and update it to a newer language software hosted on modern equipment.

Existing research was revised, a re-engineering methodology was selected, an implementation strategy was developed and then a “case study” examination of this methodology and strategy was performed. For the case study, a legacy system, the Navy satellite communications multiplexer, the TD1271B/U Multiplexer, its existing documentation was developed, a code analysis tool was developed, the re-engineering on one of its sub-systems was performed, and the results analysed. Observations, recommendations and conclusions on changes, enhancements, and pitfalls to the methodology are provided that will be of assistance in future re-engineering efforts of legacy systems.

DoD KEY TECHNOLOGY AREA: Computing and Software

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