

TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION.....	1
1.1 BACKGROUND.....	1
1.2 SOFTWARE PROJECT MANAGEMENT	1
1.3 SOFTWARE PROJECT PLANNING	3
1.4 DIFFICULTIES FACING SOFTWARE PROJECT MANAGERS	3
1.5 INTELLIGENT ASSISTANCE FOR SOFTWARE PROJECT PLANNING	5
1.6 AIMS AND OBJECTIVES	6
1.7 THE P3 PROJECT.....	7
1.8 LAYOUT OF THESIS	8
CHAPTER 2 SOFTWARE PROJECT PLANNING.....	10
2.1 INTRODUCTION	10
2.2 SOFTWARE PROJECT PLANNING	10
2.3 SOFTWARE PROJECT SUPPORT SYSTEMS.....	12
2.4 SOFTWARE PROJECT MANAGEMENT TOOLS.....	14
2.4.1 COMMERCIAL EXAMPLES.....	17
2.5 TOOL USERS	19
2.5.1 PROJECT MANAGER A	21
2.5.2 PROJECT MANAGER B.....	22
2.5.3 PROJECT MANAGER C.....	23
2.5.4 PROJECT MANAGER D	24
2.5.5 PROJECT MANAGER E.....	25
2.5.6 PROJECT MANAGER F.....	26
2.5.7 SURVEY RESULTS	27
2.6 SUMMARY.....	28
CHAPTER 3 APPROACHES TO INTELLIGENT ASSISTANCE	29
3.1 INTRODUCTION	29
3.2 INTELLIGENT ASSISTANCE APPROACHES	29
3.2.1 DECISION SUPPORT SYSTEMS.....	29

3.2.2 EXPERT SYSTEMS	31
3.2.3 EXPERT CRITIQUING SYSTEMS	33
3.2.4 INTELLIGENT TUTORING SYSTEMS	35
3.2.5 BLACKBOARD SYSTEMS.....	36
3.2.6 INTELLIGENT AGENTS	38
3.2.7 REVIEW OF APPROACHES	40
3.3 PROPOSAL FOR A NEW INTELLIGENT ASSISTANT	43
3.4 SUMMARY.....	45
CHAPTER 4 ARCHITECTURAL PERSPECTIVES.....	46
4.1 INTRODUCTION	46
4.2 SOFTWARE ARCHITECTURES	46
4.3 INTELLIGENT SYSTEM ARCHITECTURES	48
4.3.1 ADEPT	48
4.3.2 ARCHON	52
4.3.3 RISKMAN2	55
4.3.4 REVIEW OF ARCHITECTURES.....	58
4.4 DESIRABLE ARCHITECTURAL CHARACTERISTICS	62
4.5 ARCHITECTURAL TRENDS	63
4.5.1 CORBA.....	65
4.5.2 THE JAVA LANGUAGE.....	67
4.5.3 JAVA AS AN AGENT LANGUAGE.....	68
4.5.4 JAVA AS A CORBA OBJECT LANGUAGE	69
4.6 SUMMARY.....	70
CHAPTER 5 KNOWLEDGE BASE ISSUES.....	71
5.1 INTRODUCTION	71
5.2 KNOWLEDGE ENGINEERING	71
5.3 KNOWLEDGE REPRESENTATION SYSTEMS	72
5.4 AGENT REPRESENTATION LANGUAGES	74
5.4.1 KQML.....	75
5.4.2 TELESRIPT / ODYSSEY	77
5.4.3 JESS / CLIPS	78

5.4.4 LANGUAGE CHOICE.....	79
5.5 KNOWLEDGE ACQUISITION	80
5.6 SUMMARY.....	82
CHAPTER 6 SYSTEM ARCHITECTURE.....	83
6.1 INTRODUCTION	83
6.2 ARCHITECTURAL ISSUES	83
6.3 ARCHITECTURE COMPONENTS	84
6.3.1 COMPONENT INTERFACES	86
6.3.2 USER INTERFACE	87
6.3.3 SYSTEM KERNEL.....	90
6.3.4 DATA MANAGER	92
6.3.5 AGENT CONTROLLER.....	93
6.3.6 BLACKBOARD	95
6.3.7 AGENT LIBRARY	97
6.4 REVIEW OF ARCHITECTURAL CHARACTERISTICS	99
6.5 SUMMARY.....	101
CHAPTER 7 PROTOTYPE IMPLEMENTATION	102
7.1 INTRODUCTION	102
7.2 DESIGN	102
7.2.1 DESIGN APPROACH.....	103
7.2.2 CLIENT-SERVER COMPONENTS	103
7.2.3 COMPONENT INTERFACES	106
7.2.4 USER INTERFACE	107
7.2.5 SYSTEM KERNEL.....	108
7.2.6 AGENT CONTROLLER.....	109
7.2.7 AGENT LIBRARY	111
7.3 IMPLEMENTATION	112
7.3.1 DEVELOPMENT TOOLS	112
7.3.2 IDL INTERFACES.....	113
7.3.3 CLIENT-SERVER COMPONENTS	116
7.3.4 IMPLEMENTING SYSTEM COMPONENTS	117

7.3.5 KNOWLEDGE BASE IMPLEMENTATION	119
7.3.6 KNOWLEDGE BASE EVOLUTION	122
7.4 SYSTEM USAGE.....	123
7.4.1 EXAMPLE USER SESSION	124
7.4.2 EXAMPLE COMPONENT INTERACTION	129
7.5 PROTOTYPE DEVELOPMENT OBSERVATIONS.....	131
7.6 SUMMARY.....	132
CHAPTER 8 RESEARCH METHODOLOGY AND DESIGN.....	133
8.1 INTRODUCTION	133
8.2 RESEARCH METHODOLOGIES	133
8.2.1 RESEARCH METHODOLOGIES IN COMPUTING.....	134
8.3 CHOOSING A RESEARCH APPROACH	136
8.4 SUMMARY.....	140
CHAPTER 9 PROTOTYPE DEPLOYMENT	141
9.1 INTRODUCTION	141
9.2 TRIAL USAGE PROCESS.....	141
9.2.1 TRIAL 1	143
9.2.2 TRIAL 2.....	146
9.2.3 TRIAL 3.....	149
9.2.4 TRIAL 4.....	151
9.2.5 TRIAL 5.....	153
9.2.6 TRIAL 6.....	155
9.3 TRIAL USAGE FINDINGS	158
9.4 SUMMARY.....	160
CHAPTER 10 CONCLUSIONS.....	161
10.1 RESEARCH GOALS	161
10.2 RESEARCH OUTCOMES.....	162
10.3 FURTHER RESEARCH.....	163
10.3.1 SYSTEM ARCHITECTURE	164
10.3.2 KNOWLEDGE BASE	165

10.3.3 PROTOTYPE SYSTEM.....	167
10.4 CONCLUDING REMARKS	168
APPENDIX A SUMMARY OF P3 PROJECT.....	170
APPENDIX B SURVEY OF TOOL USERS	172
APPENDIX C CASE STUDY.....	173
REFERENCES	178

TABLE OF FIGURES

FIGURE 2.1 - PLANNING PROCESS	10
FIGURE 3.1 - COMPONENTS OF A DECISION SUPPORT SYSTEM.....	30
FIGURE 3.2 - COMPONENTS OF A EXPERT SYSTEM	32
FIGURE 3.3 - THE CRITIQUING PROCESS	34
FIGURE 3.4 - DOMAIN KNOWLEDGE ARCHITECTURE	36
FIGURE 3.5 - BLACKBOARD COMPONENTS	37
FIGURE 3.6 - DECISION MAKING PROCESS.....	44
FIGURE 3.7 - DECISION MAKING FRAMEWORK.....	44
FIGURE 4.1 - ADEPT AGENT ARCHITECTURE.....	50
FIGURE 4.2 - ARCHON AGENT ARCHITECTURE.....	53
FIGURE 4.3 - RISKMAN2 ARCHITECTURE.....	56
FIGURE 4.4 - CORBA INTEROPERABILITY.....	66
FIGURE 4.5 - CORBA CLIENT-SERVER RELATIONSHIP	66
FIGURE 4.6 - JAVA VIRTUAL MACHINE ARCHITECTURE	67
FIGURE 6.1 - HIGH-LEVEL VIEW OF ARCHITECTURE	84
FIGURE 6.2 - COMPONENT ARCHITECTURE.....	84
FIGURE 6.3 - COMPONENT CONFIGURATION	85
FIGURE 6.4 - STUB AND SKELETON CODE (PROXY OBJECTS)	87
FIGURE 6.5 - USER INTERFACE COMPONENT ARCHITECTURE	88
FIGURE 6.6 - SYSTEM KERNEL COMPONENT ARCHITECTURE	90
FIGURE 6.7 - DATA MANAGER COMPONENT ARCHITECTURE	92
FIGURE 6.8 - AGENT CONTROLLER COMPONENT ARCHITECTURE.....	93
FIGURE 6.9 - BLACKBOARD NODE HIERARCHY	95
FIGURE 6.10 - BLACKBOARD SEGMENT STRUCTURE.....	96
FIGURE 6.11 - BLACKBOARD SCENARIO STRUCTURE.....	96
FIGURE 6.12 - AGENT LIBRARY COMPONENT ARCHITECTURE.....	97
FIGURE 6.13 - AGENT STRUCTURE.....	98
FIGURE 7.1 - CLIENT-SERVER STRUCTURE	104
FIGURE 7.2 - DESKTOP CONFIGURATION.....	105
FIGURE 7.3 - NETWORK CONFIGURATION	105

FIGURE 7.4 - INTRANET CONFIGURATION	105
FIGURE 7.5 - USER INTERFACE - SYSTEM KERNEL INTERFACE	106
FIGURE 7.6 - SYSTEM KERNEL - AGENT CONTROLLER INTERFACE.....	106
FIGURE 7.7 - AGENT CONTROLLER - AGENT LIBRARY INTERFACE	106
FIGURE 7.8 - OVERVIEW OF USER INTERFACE CLASSES.....	107
FIGURE 7.9 - OVERVIEW OF SYSTEM KERNEL CLASSES	108
FIGURE 7.10 - OVERVIEW OF AGENT CONTROLLER CLASSES	110
FIGURE 7.11 - OVERVIEW OF AGENT LIBRARY CLASSES	111
FIGURE 7.12 - HIERARCHY OF KNOWLEDGE AREAS	119
FIGURE 7.13 - PROJECT MODEL SELECTION SCREEN	124
FIGURE 7.14 - PROJECT PLAN PANEL SCREEN	126
FIGURE 7.15 - SCENARIO WINDOW SCREEN	126
FIGURE 7.16 - SCENARIO MANAGER SCREEN	127
FIGURE 7.17 - ADVICE COUNTER.....	127
FIGURE 7.18 - ADVICE MANAGER WINDOW	128
FIGURE 7.19 - MAIN HELP SCREEN.....	128
FIGURE 7.20 - EVENT TRACE.....	129

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After some time they crossed the Water, west of Hobbiton, by a narrow plank-bridge. The stream there was no more than a winding black ribbon, bordered with leaning alder trees. A mile or two further south they hastily crossed the great road from the Brandywine Bridge; they were now in the Tookland and bending south-eastwards they made for the Green Hill Country. As they began to climb its first slopes they looked back and saw the lamps in Hobbiton far off twinkling in the gentle valley of the Water. Soon it disappeared in the folds of the darkened land, and was followed by Bywater beside its grey pool. When the light of the last farm was far behind, peeping among the trees, Frodo turned and waved a hand in farewell. 'I wonder if I shall ever look down in that valley again', he said quietly.

The Lord of the Rings

J. R. R. Tolkien

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ABSTRACT

It is the proposition of this research that there are a number of weaknesses in the current approaches being taken in the provision of software project planning tools and that there is significant scope to improve on existing systems by the development of an intelligent assistant system which will provide decision support for the software project planner in the creation of plans for a software development project.

This research has devised a framework and architecture based on a fusion of a number of techniques within a multi-agent framework which aims to improve the quality of the decision making process of software project planners. This framework incorporates the information gathering and analysis techniques of a Decision Support System with the ability of an Expert System to propose possible solutions using expert knowledge and best practices and the power of Blackboard to exchange information between components. This novel approach enables the inter-working of a variety of well understood techniques within a single underlying framework - that of the agent-orientated paradigm.

To assist with validating the proposed architecture, a prototype application was developed and a series of user trials conducted. The conclusion of these trials was that the prototype system demonstrated that the notion of an intelligent assistant system for software project planning was a viable concept, worthy of further investigation. Further, it demonstrated that the proposed architecture provided a viable framework for supporting the software project planners decision making process and has the potential to be of use in a commercial setting.