Contents

1. Introduction 1

1.1. Problem Statement 1

1.2. System Personnel 1

1.3. Operational Setting 2

1.4. Impacts 2

1.5. Related Systems 2

2. Functional Requirements 4

2.1. User Interface Overview 4

2.1.1. Command Summary for Regular Users 4

2.1.2. Command Summary for Administrative Users 8

2.1.3. Command Summary for Unregistered Users 9

2.1.4. Screen Map 9

2.2. Basic Appointment Scheduling 9

2.3. Viewing Calendars 15

2.3.1. Viewing the Calendar at Different Levels 16

2.3.1.1. Day View 16

2.3.1.2. Week Views 21

2.3.1.3. Month View 26

2.3.1.4. Year View 27

2.3.1.5. Scheduled Item View 27

2.3.2. Viewing Previous, Next, and Specific Calendar Dates 30

2.3.2.1. Next and Previous 30

2.3.2.2. Today 31

2.3.2.3. Goto Date 31

2.3.2.4. Upper and Lower Date Bounds 34

2.3.3. Viewing Lists of Scheduled Items 34

2.3.3.1. Appointment Lists 35

2.3.3.2. Meeting Lists 37

2.3.3.3. Task Lists 38

2.3.3.4. Event Lists 39

2.3.3.5. All Items Lists 40

2.3.3.6. Custom Lists 42

2.3.4. Filtered Viewing 46

2.3.4.1. Custom Filter Definition 51

2.3.4.1.1. Title 51

2.3.4.1.2. Earliest and Latest Date 55

2.3.4.1.3. Earliest and Latest Time 55

2.3.4.1.4. Duration 55

2.3.4.1.5. Recurring? 56

2.3.4.1.6. Category 56

2.3.4.1.7. Location 56

2.3.4.1.8. Security 56

2.3.4.1.9. Priority 57
2.3.4.1.10. Task Priority 57
2.3.4.1.11. Completed? and Completion Dates 57
2.3.4.1.12. Remind? 57
2.3.4.1.13. Details 57
2.3.4.1.14. Attendees 57
2.3.4.2. Using Custom Filters 58
2.3.5. Viewing Other Users and Group Calendars 58
2.3.5.1. Viewing Other User‘s Calendars 58
2.3.5.2. Viewing Group Calendars 64
2.3.6. Viewing in Different Windows 65
2.3.6.1. Windowing Mode 67
2.3.6.1.1. Per-Level Windowing Mode 68
2.3.6.1.2. Two-Window Mode 69
2.3.6.1.3. Multi-Window Mode 70
2.3.6.2. Magnetizing Windows 70
2.4. More Scheduling 70
2.4.1. Scheduling Meetings 70
2.4.1.1. A Group Leader Scheduling Two Straightforward Meetings 71
2.4.1.2. A Group Leader Encountering Difficulties While Scheduling 78
2.4.1.3. A Super-Group Leader Scheduling a Meeting 87
2.4.1.4. A Non-Leader Scheduling a Meeting for Selected Individuals 90
2.4.1.5. Receiving and Accepting Meeting Notifications 94
2.4.1.6. Further Operational Details of Meeting Scheduling 94
2.4.1.6.1. The Contents of Group Calendars 94
2.4.1.6.2. Scheduling Over Private Items 94
2.4.1.6.3. The Status of Not-Yet-Accepted Meetings 94
2.4.1.6.4. Creation of New Categories 95
2.4.1.6.5. The Role of the Location Database 95
2.4.1.6.6. Non-Unique Scheduled Meetings 95
2.4.1.6.7. Concurrent Scheduling 95
2.4.2. Scheduling Tasks 95
2.4.3. Scheduling Events 96
2.5. Finer Points of Viewing and Scheduling 101
2.5.1. Item-Level Viewing 101
2.5.1.1. Viewing Appointment Items 101
2.5.1.2. Viewing Meeting Items 101
2.5.1.3. Viewing Task Items 101
2.5.1.4. Viewing Event Items 101
2.5.1.5. Item-Level Viewing in Other Users’ Calendars 101
2.5.2. Changing and Deleting Scheduled Items 101
2.5.2.1. Changing and Deleting Appointments 102
2.5.2.2. Scheduler Changing and Deleting Meetings 102
2.5.2.3. Changing and Deleting Tasks 102
2.5.2.4. Changing and Deleting Events 102
2.5.3. Details of Scheduling Recurring Items 102
2.5.3.1. Weekly/Biweekly Intervals 103
2.5.3.2. Monthly Intervals 103

2.5.3.3. Yearly Intervals 107
2.5.3.4. Recurring Meeting Requests 107
2.5.3.5. Recurring Items and Instances 110
2.5.4. Receiving Reminders 110
2.5.5. Editing Categories 111
2.5.6. Dynamic View Updating 111
2.6. Administrative Functions 112
2.6.1. Gaining Administrative Access 112
2.6.2. User Database 113
2.6.3. Group Database 120
2.6.4. Location Database 127
2.6.5. Other Admin Commands 131
2.6.6. Regular User Access to Admin Commands 135
2.6.6.1. Summary of Super User Privileges 135
2.7. Individual User Options 135
2.7.1. Times and Dates 135
2.7.2. Scheduling Options 135
2.7.2.1. Accepting Meeting Notifications 135
2.7.3. Viewing Options 136
2.7.3.1. Initial View Level 136
2.7.3.2. List Length 137
2.7.3.3. Other Lists Options 137
2.7.3.3.1. Expand Recurring 137
2.7.3.4. External WWW Browser 137
2.7.4. Administrative Options 137
2.7.4.1. The Text Body of Meeting Announcements 137
2.7.5. Advanced Options 137
2.8. Details of File Commands 137
2.8.1. Invoking the Calendar Tool from the Underlying Operating Environment 137
2.8.2. New, Open, and Close 138
2.8.3. Save, Save As, Save All 138
2.8.4. Save Config 138
2.8.5. Printing 139
2.9. Details of Edit Commands 139
2.9.1. Undo, Redo, Repeat 139
2.9.2. Cut, Copy, Paste 139
2.9.3. Find 139
2.9.4. Text Command Interface 139
2.10. Help 139
2.11. Data Entry Details 139
2.11.1. Date Formats 139
2.11.2. Item Uniqueness Requirements 139
2.11.3. Scheduling Dialogs and Item-Level Displays 140
2.11.3.1. Meeting Scheduling Dialogs 140
2.11.3.2. Defaults 141
2.11.4. Required Fields 141

2.11.5. Selecting Viewing Targets 142
2.11.6. Deletion of Scheduled Items 143
2.11.7. Overlapping Items 143
2.11.8. Category Editing Details 143
2.11.9. String and Pattern Matching Rules 143
2.11.10. Regular Expression Filtering Patterns 143
2.11.11. Boolean Expression Filtering Patterns 143
2.11.12. System-Defined Events 144
2.11.13. Dialog State Details 144
2.11.13.1. Custom List Dialog 144
2.11.14. Combo-box menu text truncation and other behaviours 144
2.11.15. Default Names 145
2.11.16. Name Completion 145
2.11.17. Meeting Minutes 145
2.11.18. Merging Scheduler Changes 145
2.11.19. Change and Delete of Recurring Items 145
2.11.20. Picky Details about Change/Delete Button Enabling 145
2.12. Error Conditions 146
2.12.1. Non-Admin Attempting to Login as Admin 146
2.12.2. Commands with No Effect 146
2.12.3. Searching for Unknown User 146
2.12.4. Scheduling Errors 146
2.12.4.1. Unknown Meeting Attendees 147
2.12.4.2. Meeting Scheduler Validation 147
2.12.4.3. Non-Unique Items 147
2.12.4.4. Changing a Meeting to an Unavailable Location 147
2.12.5. Errors from an External WWW Browser 147
2.12.6. Administrative Errors 147
2.13. Graphical User Interface Details 148
2.13.1. 28jun01 Note 148
2.13.2. View Command Display Details 148
2.13.2.1. Resizing Windows 148
2.13.2.2. Details of Horizontal Overlap Display 149
2.13.3. Banner Augmentation 149
2.13.4. Window Positioning for Next/Previous Commands 149
2.13.5. Non-Modal Dialogs 150
2.14. Multi-User Operating Environment 150
2.14.1. Invoking the Calendar Tool from the Operating Environment 150
2.14.2. The Central Calendar Repository 150
2.14.3. Messaging 151
2.14.4. Coordination 151
2.14.5. Implementation Considerations 151

3. Non-Functional Requirements 152

4. Developer Overview 153

5. Formal Specification 154