WEB BASED MEETING SCHEDULER SYSTEM

Project Phase 2.1

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SUPPLEMENTARY SPECIFICATION

VERSION 1.2

TEAM – “CALL OF DUTY”

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## Revision History

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1. Introduction

1.1. Overview

The supplementary specification document is composed of different sections including Functionality of the various actors, major non-functional requirements and its description like Security, Reliability, Performance, Usability, Maintainability, Design Constraints, Online User Documentation and Help System Requirements, Purchased Components, Licensing Requirements, Legal, Copyright, and Other Notices, Applicable Standards.

It basically captures the system requirements that are not readily captured in the use cases of the use-case model. It basically describes how non-functional thing/operations contribute towards the achievement of non-functional requirements.

Design Constraints emphasis on any constraints imposed during design phase on the system being built. It answers the following questions: what software languages are used for development, what software processed is used for requirements, identifies the developmental tools, and also explains the architectural and design constraints.

Online user documentation describes the requirements for on-line user documentation and help systems requirements.

The section about purchased components describes any purchased components to be used with the system, any applicable licensing or usage restrictions, and interfaces.

Licensing Requirements, Legal, Copyright, and Other Notices section describes any necessary legal disclaimers, warranties, copyright notices, patent notice, trademark, or logo compliance issues for the software.

Applicable Standards section describes by reference any applicable standards and the specific sections of any such standards that apply to the system being described.

1.2. Purpose

The purpose of the Supplementary Specification is to describe those system requirements that are not discussed and described in the use cases of the use-case model. It includes requirements such as quality attributes of the system namely usability, reliability, security, performance, and maintainability requirements legal and regulatory requirements, application standards, and design constraint.

1.3. Scope

This Supplementary Specification applies to the WMS, which is being developed by the Meeting team “Call of Duty”. The team will develop a system that allows individuals or organizations to easily, efficiently, and precisely schedule meetings in accordance with practical limitations of virtual and real-world meetings. The scope of this document does on how the software system will try to achieve what it is intended to do, by describing requirements such as security, reliability, maintainability, usability and performance by using SIG.

1.4. Definitions, Acronyms, and Abbreviations

Refer Glossary

1.5. References

This subsection provides a complete list of all documents referenced elsewhere in the Supplementary Specification.


2. Functionality

2.1. Administrator

- The system shall allow the administrator to add users.
- The system shall allow the administrator to modify user profile.
The system shall allow the administrator to remove users.
The system shall allow the administrator to remove equipment.
The system shall allow the administrator to add new equipment given information.
The system shall allow the administrator to modify information about an equipment and location.

2.2. Initiator role

- The system shall allow the initiator to invite for meetings by sending meeting requests information.
- The system shall allow the initiator to view the information of any meetings which they initiated.
- The system shall allow the initiator to send and receive messages from users.
- The system shall make suggestion for meeting date and location based on the user response(s).
- The system shall update the suggestion corresponding to meeting date/location after it has been proposed.
- The system shall allow the initiator to cancel any meetings which they initiated.
- The system shall allow the initiator to modify any of the following information for a meeting which they initiated.
- The system shall allow the initiator to perform the following conflict resolution activities for a meeting they have initiated.
- The system shall allow the initiator to consider specific criteria to schedule a meeting.
- The system shall allow initiator to give an option to the participants to attend partial meetings.
- The system shall allow initiator to extend an option to the participants to attend virtual meetings.
- The system shall allow the initiator to monitor the meeting in case of virtual meetings.

2.3. User role (meeting participants)

- The system shall authenticate users at the beginning each session.
- The system shall notify the user of any schedule changes.
- The system shall allow users to send and receive messages.
- The system shall allow the user to view their schedule.
- The system shall request a user response to initiator’s messages.
- The system shall allow the user to reset the password.
- The system shall allow the user to update and modify personal contact information.
- The system shall allow users to attend partial meetings.
- The system shall allow users to attend virtual meetings.
3. **NFR Formal specifications**

The NFR Framework is a goal-driven, process-oriented approach to dealing with Non-Functional Requirements. NFR Framework introduces the concept of softgoal, whose achievement is judged by the sufficiency of contributions from other (sub-) softgoal. The NFR specification can be divided as Product and Process nonfunctional requirements specification. The product nonfunctional requirements are the requirements like performance, security which define the features of the WMS meeting scheduling system. The process non functional requirements are the requirements like reliability, usability, maintainability etc.

3.1. **Softgoal Interdependency Graph (SIG) for Product Specification**

The Softgoal Interdependency graph is used to support the systematic, goal oriented process of architectural design. It is used to capture the dependency between non-functional requirements of a system. NFR softgoal contribute positively or negatively in fulfilling other softgoal. First the high level goal is identified which is further decomposed into multiple sub level goals until they are satisfied by operational soft goals.

3.1.1. **Security**

The security NFR is decomposed in the below 3:

- **Confidentiality**: User should be able to access the system after successful authentication. User information is not visible to other users in the system.
- **Availability**: Availability indicates that the system should be available with minimum down time
- **Integrity**: The data stored in the system should be complete and accurate.

The confidentiality is given priority and is interpreted as Authentication which is achieved through the Login which requires password.

3.1.2. **Performance**

The performance is decomposed as 3 softgoal:

- **Capacity**: System shall be able to handle multiple scheduling requests at a time.
- **Responsiveness**: The system should respond to the user action on the screen should be according to the world wide standards of 0.1 second.
- **Reduced overhead**: The system shall reduce the time and cost overhead by reducing interactions and automating the tasks.
3.2. NFR Softgoal Interdependency Graph (SIG) for Process NFR

3.2.1. Usability
Usability NFR is decomposed as 2 softgoal:
- **Convenience**: The system shall be convenient to use in terms of accessing and using the interface.
- **Ease of Learning**: The system shall be user friendly and be easy to learn with a minimal learning curve. The user interface of the WMS shall be designed for ease-of-use and shall be appropriate for a computer-literate user community with no additional training on the system.

3.2.2. Reliability
Reliability NFR is decomposed as 3 softgoal:
- **Accuracy**: The system shall store information accurately in terms user preferences, meeting schedules, etc.
- **Availability**: System shall be accessible via internet to all users of the system. It should be available 24 hours a day 7 days a week with minimal downtime.
✓ **Consistency** System should not allow scheduling meetings in the same location at the same time to avoid conflicts.

![Diagram of Reliability and Consistency](image)

### 3.2.3. Maintainability
The system should be modularized with each module having least amount level of interdependence with other modules. WMS shall be maintainable. Maintainability is provided by features like: Modifiable, evolvable, and scalable.

Maintainability NFR is decomposed as 3 softgoal:

- **Modifiable**: It shall be able to customizable according to customers/users needs. Modifiability further depends on structured design. Structured is provided by object oriented.
- **Scalable**: The system shall be built in such a way that new functionalities can be added easily in future.
- **Evolvable**: It shall be able to evolve to support new functionality like setting up virtual meetings, etc.
- **Reusable**: The system should be designed to be reusable. Reusable modules and classes reduce implementation time.
4. Design Constraints

4.1. Hardware limitation

4.2. Software limitation
The system shall be developed using n-tier architecture consisting of the presentation (web layer), business layer and Data Access layer.

1. Integrated Development Environment : Netbeans IDE
2. Development using Java 1.6, J2ee, Servlets, Ajax, JavaScript on Glassfish Server 3
3. Database Management : SQL server 2005

The web-based interface for the WMS shall run in the below internet browsers

- Internet Explorer 64.x and above
- Netscape Navigator 4.06 and above
- Firefox

5. Online User Documentation and Help System Requirements
Online support (24X7) concerning administration issues & user tutorials will be provided. Readme files and release notes will be provided delivered to the customer in each release. User guides and Administration guides are given along with the product. A video help will be provided for help on the home page of the system (next release).

6. Purchased Components
There will be no purchased components; the only components permitted are the java standard development kit components

7. Interfaces

7.1. User Interfaces
All interaction with the WMS will occur through a web-based interface. The WMS can only be accessed through a secure user interface with the use of a valid login id and password.

7.2. Hardware Interfaces
The WMS will interact only with the provided web server and database server.

7.3. Software Interfaces
The WMS will interface with SQL Server 2005 for database interactions
The WMS will utilize GlassFish Version 3 server to host the application

7.4. Communications Interfaces
None

8. Licensing Requirements
None.

9. Legal, Copyright, and Other Notices
The product will be part of open source under GNU GPL (GNU General Public License). GPL states that everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

10. Applicable Standards
- All documentation should meet IEEE and RUP standards.
- Software should fit the requirements of standard JAVA development steps.