**Synergy Distributed Meeting Scheduler System**

***Project Phase II***

**Vision Document**

**Version 1.2**

 **Team: HIGH-FLIERS**

**Team URL: http://www.utdallas.edu/~rxt058000/welcome.html**

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# Introduction

Synergy Soft, Inc. has been using a simple Microsoft Excel spreadsheet for scheduling meetings and keeping track of attendees. Since the company has grown over time, this method has become highly inefficient. To solve this problem, they have decided to use an effective software system that would enable them to schedule meetings and provide other related services like reserving meeting locations, inviting people, rescheduling meetings etc. After gathering the initial documents, they have approached the **high-fliers** to deliver a detailed requirements document. This software system (SDMS) shall serve as a solution to Synergy Soft, Inc.’s problem of inefficient meeting scheduling methods.

## Purpose

The purpose of this document is to collect, analyze and define high level requirements, user wants and needs and system features for a proposed Synergy Distributed Meeting Scheduler, which is a software system to schedule meetings effectively. The system shall focus on the capabilities needed by the stakeholders and target users (Meeting Participants and Initiators).

The details of how the system fulfils these needs can be found in the supplementary specification.

##  Scope

This initial version (Version 1.0) of the SDMS Vision document shall primarily focus on the high level user needs, as well as general requirements and features. In addition, information pertaining to user wants and needs, for use in determining future system requirements and features, are also included.

The SDMS is an software system which allows the user to schedule meetings with less number of interaction between the meeting initiator and the meeting participants. The system takes care of selecting a preferred date for the meeting depending on the participant’s calendars.

## Definitions, Acronyms, and Abbreviations

|  |  |
| --- | --- |
| SDMS | Synergy Distributed Meeting Scheduler |
| Meeting Initiator | A person that initiates meeting scheduling and makes final choice of meeting date and location |
| Potential Participant | A person who will attend the meeting |
| Important Participant | A participant who is necessary to the purpose of the meeting |
| Active Participant | A participant who will play a major role in the meeting and is responsible for specifying equipment requirements; is identified by the meeting initiator |
| Meeting Proposal | An invitation to a meeting including the meeting topic, date range, and duration that is sent to a list of Confirmed and Unconfirmed participants |
| Date Range | a time interval established by the meeting initiator during which he would like the meeting to occur |
| *Exclusion set*  | Date ranges when attendees cannot attend meeting |
| *Preference set*  | Date range when attendees can attend meeting |
| Date Conflicts | Occurs when no meeting date within *preference set* , excluding *exclusion set*  can be found. |
| Virtual Meeting | Meetings in a virtual place e.g.: teleconferencing |
| Optional Participant | A participant who is optional to attend the meeting |

## References

1. Home Appliance Control System Vision by Lawrence Chung, Kendra Cooper and Sam Courtney

# Positioning

## Business Opportunity

The business can improve their process of scheduling meeting from using a simple Microsoft Spread Sheet to an effective SDMS. By having an SDMS the company does not have to spend hours in negotiating with the participants about the meetings. This can leave more room for other tasks of the organization. The processes or products can achieve a new level of innovation each time they are worked on, thus promoting a less expensive and better quality product. This will in effect translate to better quality product and customer satisfaction which in effect opens up more business opportunity.

## Problem Statement

|  |  |
| --- | --- |
| The problem of | Inefficient and time consuming process of scheduling meetings manually |
| affects | Company work force |
| the impact of which is  | Loss of productive time which in-turn affects the company’s productivity. |
| a successful solution would be | A flexible and efficient system to schedule meetings in a less time consuming manner. |

**Problem Fish Bone Diagram**

Difficulty in monitoring meetings

Difficult to schedule a meeting whenever we want (anytime-24/7)

Difficulty in scheduling meetings if attendees cannot be physically present during the meeting

Hard to reflect changing participants’ constraints

Unauthorized users may access the meeting information

Difficulty in keeping track of the meeting location and meeting date

Large number of negotiations

Time consuming process of selecting a meeting date that is convenient to all the attendees

People are facing many difficulties while Scheduling meetings manually

This fish bone diagram shows that the major problem as people facing many difficulties while scheduling meetings manually. People are facing such difficulty because of the following reasons:

* Time consuming process of selecting a meeting date that is convenient to all the attendees
* Large number of negotiations
* Difficulty in keeping track of the meeting location and meeting date
* Unauthorized users may access the meeting information
* Difficulty in monitoring meetings
* Difficult to schedule a meeting whenever we want (anytime-24/7)
* Difficulty in scheduling meetings if attendees cannot be physically present during the meeting
* Hard to reflect changing participants’ constraints

**Solution Fish Bone Diagram**

Difficulty in scheduling meetings if attendees cannot be physically present during the meeting

Difficulty in monitoring meetings

Hard to reflect changing participants’ constraints

Time consuming process of selecting a meeting date that is convenient to all the attendees

Unauthorized users may access the meeting information

Difficulty in keeping track of the meeting location and meeting date

Large number of negotiations

*Solution:*

SYNERGY DISTRIBUTED MEETING SCHEDULER SYSTEM (SDMS)

People are facing many difficulties while Scheduling meetings manually

The solution fish bone diagram shows that the SDMS solves the following problems:

* People are facing many difficulties while Scheduling meetings manually
* Large number of negotiations
* Time consuming process of selecting a meeting date that is convenient to all the attendees
* Hard to reflect changing participants’ constraints
* Difficulty in monitoring meetings
* Difficulty in scheduling meetings if attendees cannot be physically present during the meeting
* Unauthorized users may access the meeting information
* Difficulty in keeping track of the meeting location and meeting date

## Product Position Statement

|  |  |
| --- | --- |
| For | A company’s workforce |
| Who | Needs a quick and efficient way to schedule meeting without spending much time in resolving conflicts |
| SDMS | Is an software system to schedule meetings |
| That | Provides its users an effective way to schedule and manage meetings in less time consuming manner |
| Unlike | The current process of scheduling meetings manually through a Microsoft Spread sheet. |
| Our Product | Includes features such as conflict resolution, tracking meeting requests, choose location and equipment, less number of negotiations, place to upload meeting documents. |

# Stakeholder and User Descriptions

## Market Demographics

Today, most company workers spend the majority of their time in resolving conflicts while scheduling meetings, negotiating with the meeting participants and rescheduling them again. Synergy Soft Inc with the help of its SDMS, is dedicated to providing the flexible, effective and less time consuming way to schedule meetings. This decreases the time spent on scheduling meetings and this time can be productively used for other tasks.

With the rapid demand for a flexible and time effective meeting scheduler, Synergy Soft Inc can use its generic solution to capture the market which is need for such a meeting scheduler system.

## Stakeholder Summary

Table: Non-User Stake Holders

|  |  |  |
| --- | --- | --- |
| **Name**  | **Description** | **Responsibilities** |
| Requirements Engineer | This is a stakeholder that workswith to gather user’s needs/requests and translates them correctly into requirements to be used fordesign. | He is responsible to analyze the requirements and prepare the Use case diagrams. He is also responsible to identify possible issues and come up with a solution after interacting with the business. He is also responsible to refine requirements. |
| Team Leader | Leads and coordinates the team  | He is responsible to lead and coordinate the team and review each deliverable and contribute feedback to the team. He is also responsible to conduct team meetings whenever necessary. |
| Designer | This is a stakeholder works on preparing the systemdesign. | He is responsible to create UML diagrams necessary for the development which address FRs and SIGs which address NFRs |
| Prototype Developer | This is a stakeholder primarily works on the systemDevelopment. | He is responsible to develop the system from the design given by the designer.  |

## User Summary

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Responsibilities** |
| Meeting Scheduler/Initiator | A person who initiates meetings | He is responsible to Initiate a particular meeting by selecting participants, meeting location, preferred start and end date and time period. |
| Participant | A person who participates in the meetings | There are 3 types of participants for the SDMS – Important, Active and Optional. Important participants – Very important for a meeting and the meeting will be cancelled if they cannot attend the meeting. Active – They address the meetings. Optional – All the other participants are optional |
| Administrator | A person who manages users of the system | He accepts the users request for registering into the system by reviewing their credibility, unlock user accounts and delete user accounts. |

**Business Use Case Diagram**



This business use case diagram shows the business actors and the use cases. It depicts the high level business functions in relation to the following actors:

Meeting Initiator:

A meeting initiator can sign up, login, initiate a meeting, resolve conflicts, reschedule meeting, cancel meeting and select location, equipment and date.

Participant:

A meeting participant can sign up, login, accept meeting request, select location, equipment and date.

The business functions for scheduling meetings are initiate meeting, cancel meeting, accept/reject meeting, providing inclusion and exclusion dates and any location and equipment preferences.

**i\* Diagram:**



The above i\* diagram shows the major stakeholders of the SDMS – Meeting Initator and Meeting Participant and how they interact with the system and its functions.

**Business Class Diagram**



This diagram shows the business entities and the relationships between them along with the multiplicities between them.

**Business Sequence Diagram**



This diagram shows the business sequence diagram which depicts the interaction between a meeting initiator and meeting participant.

## User Environment

An SDMS is a very light weight system which doesn’t need any special requirements to get installed on the user environment. It can be installed on any computer. Security measures will be in place to prevent unauthorized access to the system.

## Stakeholder/User Profiles

### Meeting Scheduler/Initiator

|  |  |
| --- | --- |
| Description | A person who initiates/schedules meetings |
| Type | Primary User |
| Responsibilities | He is responsible to Initiate a particular meeting by selecting participants, meeting location, preferred start and end date and time period. |
| Success Criteria | Ability to schedule meeting on a preferred date, in a preferred location and with all the required participants with less number of negotiations |
| Involvement | We will have sample meeting schedulers to help evaluate our design to guide to our vision. |
| Deliverables | None |
| Comments/Issues | None |

### Meeting Participant

|  |  |
| --- | --- |
| Description | A person who participates in the meetings |
| Type | Primary User |
| Responsibilities | There are 3 types of participants for the SDMS – Important, Active and Optional. Important participants – Very important for a meeting and the meeting will be cancelled if they cannot attend the meeting. Active – They address the meetings. Optional – All the other participants are optional |
| Success Criteria | Ability to accept a meeting request |
| Involvement | We will have sample meeting participants to help evaluate our design to guide to our vision. |
| Deliverables | None |
| Comments/Issues | None |

### Administrator

|  |  |
| --- | --- |
| **Description** | A person who manages users of the system |
| **Type** | Primary User |
| **Responsibilities** | He accepts the users request for registering into the system by reviewing their credibility, unlock user accounts and delete user accounts. |
| **Success Criteria** | Ability to manage users – accept user requests by verifying their credibility, unlock users and delete users |
| **Involvement** | We will have sample administrators to help evaluate our design to guide to our vision. |
| **Deliverables** | None |
| **Comments/Issues** | None |

## Key Stakeholder or User Needs

|  |  |  |  |
| --- | --- | --- | --- |
| **Need** | **Priority** | **Concerns** | **Proposed Solutions** |
| Need to schedule meetings easily  | High | Ability to schedule and manage meetings easily through an online system | Develop SDMS  |
| Less Number of Negotiations | High | Management of the negotiations going to and from the meeting initiator to the meeting participant | The system takes the start date and end date from the meeting initiator and takes the exclusion set and preference set of each participant and it gets the best available date. If an optional candidate cannot make it to the meeting, it withdraws the participant automatically. If an important participants cannot make it, the meeting will be cancelled and if an active participant cannot make to the meeting, the initiator is then contacted to take the decision |
| Take less time to resolve conflicts | High | Management of conflicts to avoid more number of negotiations | The system takes the preferred set and exclusion set from the participants calendar |
| Need to schedule virtual meetings | Medium | Ability to schedule virtual meeting to allow people to attend meetings through teleconferencing | Allow meeting location to be on a particular phone line or through video conferencing |
| Scheduling meetings concurrently | Medium | Ability to schedule more than one meeting concurrently | The system should be able to take more than one meeting initiator forms. |
| Monitor Meetings | Medium | Ability for others to monitor the meetings | Provide videoconferencing to allow other people to monitor the meetings |
| Upload meeting documents | Low | Ability to upload the meeting documents for further references | Provide a section in SDMS where the meeting participants can upload their documents |
| Select Meeting Location  | High | Management of the meeting rooms | Provide a section in the meeting initiate form to allow the initiator to select a location from the available list and then the important participant gets a request to accept or give a preferred meeting location |
| Select Preferred Date for Meeting | High | Ability to select a meeting date which is convenient for most of the participants | Provide a section in the meeting initiate form to select the start date and end date and the system takes the exclusion set and preference set of each participant and it gets the best available date. |
| Select Meeting Equipment | High | Management of the available meeting equipments. | Provide a section in the meeting initiate form allowing the meeting initiator to select a meeting equipment. An active participant can also request for any equipment when he gets the request of the meeting |
| Secured Access | High | Management of private user and meeting information | Provide a login for each user and verify their credentials |
| Usability | Medium | Ability to provideintuitive navigation the complete system | Provide easy interface to the users to be able to go through the system without any training. |

# Product Overview

This section contains an overview of the proposed Synergy Distributed Meeting Scheduler System, including information such as a product perspective, product assumptions and dependencies, etc.

## Product Perspective

Synergy Soft, Inc. has been using a simple Microsoft Excel spreadsheet for scheduling meetings and keeping track of attendees. Since the company has grown over time, this method has become highly inefficient. To solve this problem, they have decided to use an effective software system that would enable them to schedule meetings and provide other related services like reserving meeting locations, inviting people, rescheduling meetings etc. After gathering the initial documents, they have approached the high-fliers to deliver a detailed requirements document. This software system (SDMS) shall serve as a solution to Synergy Soft, Inc.’s problem of inefficient meeting scheduling methods.

The Synergy Distributed Meeting Scheduler System is independent and totally self-contained as of now. But as a further enhancement it may be interfaced with the company’s address book.

## Summary of Capabilities

|  |  |
| --- | --- |
| **Customer Benefit** | **Supporting Features** |
| Organize meetings i.e., to determine, for each meeting request, a meeting date and location so that most of the intended participants will effectively participate | The system proposes a meeting date which belongs to the date range stated by the meeting initiator. It will not belong to the exclusion date set of any participant and will belong to the preferred date sets of the participants. It shall also allow the initiator to select the meeting location. |
| Monitor meetings, especially when they are held in a distributed manner | TBD |
| Plan Meetings under the constraints expressed by participants  | The meeting date proposed by the system will not belong to the exclusion date set of any participant and will belong to the preferred date sets of the participants. |
| Re-Plan a meeting to support the changing user constraints | The system allows the participants to modify their exclusion sets, preference sets; it allows the meeting initiator to extend the date range; Cancellation of the meeting is also allowed if it is inevitable. |
| Support Conflict Resolution(according to the resolution policies stated by the client) | 1. The system allows the Meeting Initiator to change the Date Range.2. The system allows the Meeting Initiator to notify the participants to change their preference and exclusion sets so as to accommodate the proposed meeting date. |
| Manage all the interactions among participants required duringthe organization of the meeting, | The system notifies the participants of the proposed meeting date; allows them to accept/reject the meeting invitations; notifies them if the meeting date is changed or if the meeting is cancelled. |

## Assumptions and Dependencies

## Cost and Pricing

TBD

## Licensing and Installation

This product will be sold to the customer on a license-basis. Installation of this product shall be performed by the customer with minimal support from the company.

# Product Features

The following features address security requirements of the system

1. Login to the system

An authorized user can log in to the SDMS system.

1. Sign Up for an account

A new user can create a new account and become an authorized user.

1. Logout of the system

A user can log out from the system.

1. Change password

An authorized user can change his/her password whenever desired.

1. Lock user account

A user account is locked by the system if a user tries to log in with an incorrect password for more than three times.

The following features relate to the process of initiating a meeting

1. Select participants for a meeting

A Meeting Initiator can select participants for his meeting.

1. Multiple meeting scheduling

A meeting initiator can schedule multiple meetings at the same time.

1. Set participant category

Participant can be categorized as important, active or optional.

1. Select “Date range” for meeting

A meeting Initiator should be able to select a Date Range within which the meeting will be scheduled.

1. Select “Location” for the meeting

A meeting location can be selected from the list of available locations based on meeting date and resources.

1. Select “Resources” for the meeting

Resources like projectors, DVD players, etc. can be requested for the meeting.

1. Get Preferred Dates of all participants

Within the date range, a set of dates that are convenient for all participants can be obtained by the system.

1. Confirm a specific meeting date from the “Date Range”

After getting preferred dates from all potential attendees, choose one preferred date that is convenient to all.

1. Send invites to participants

After confirming all meeting details, invitations can be sent to potential attendees as updates to their SDMS accounts.

1. Re-plan a meeting

A meeting Initiator can re-plan a meeting to support changing external constraints.

The following features relate to the process of responding to a meeting invite

1. Accept a meeting invite (without comments)

Potential attendees can accept a meeting invitation unconditionally.

1. Accept a meeting invite (with comments)

Potential attendees can write comments along with their acceptance to let the initiator know if they cannot stay for the entire duration of the meeting or if they need a location change or require additional resources.

1. Request additional resources for the meeting

Active participants can request additional resources while accepting the meeting invitation.

1. Suggest preferred location

Important participants can suggest their location preferences while accepting a meeting.

1. Reject a meeting invite

Potential attendees can reject a meeting invite.

The following features relate to the process of updating a meeting request

1. Change meeting Location

Based on the preference requests from important participants, the meeting initiator can change the location of the meeting.

1. Change meeting Date

The meeting can be re-scheduled by the initiator in the event of irresolvable conflicts.

1. Add meeting Details (agenda)

More details can be added to a meeting description.

1. Add new participants or remove existing participants

At any time before the meeting, the initiator can add more potential attendees to the meeting or remove the existing participants.

1. Add resources to the meeting

Based on the equipment requests from active participants, the meeting initiator can add equipment to the meeting.

1. Notify participants about any changes

Emails will be dispatched to the participants whenever the initiator makes any changes to a meeting.

1. Upload meeting minutes

All potential attendees can upload a summary of the meeting or any concerning documents.

The following features are other miscellaneous features supported by SDMS

1. Email meeting reminders

Email reminders shall be sent to all the “accepted” meeting attendees 30 minutes before the meeting.

1. Notify initiators about location contentions

When two or more meetings are contending for the same location, the initiators of those meetings are notified.

1. Update Calendar

Users can update their calendars with exclusion sets and preference sets.

Product features supporting Conflict Resolution

A conflict resolution technique shall be used by the SDMS to resolve date conflicts.

#### Date Conflict

1. If there is a date conflict with an important participant, the system cancels the meeting and asks the initiator to re-plan the meeting.
2. If there is a date conflict with an active participant, the system will inform the initiator about it. The initiator can decide on whether changing the active participant or re-schedule the meeting.
3. If there is a date conflict with an optional participant, the system automatically withdraws him from the meeting.

The following are the features available for an administrative role

1. Accept the request for a New User account

When a new user creates an account in SDMS the administrator receives a request and he activates the account before the user can start using his account.

1. Unlock user accounts

User accounts that have been locked by the system due to more than three attempts of incorrect password, can be unlocked by the administrator upon user request.

1. Disable User Accounts

User accounts which are temporarily not in use can be disabled by the administrator.

1. Enable User Accounts

User accounts that have been disabled can be enabled by the administrator when they are needed.

1. Delete user account

User accounts which are no longer in use can be deleted by the administrator.

Other features:

1. Online Access

SDMS will be launched as a web application, and can be accessed by any authorized user at any time from any location with access to the internet.

# Constraint

## Maintainability

Maintainability is provided by either testability, understandability, modifiability and evolvability.

Understandability further depends on consistency. Modifiability further depends on structured-ness and Extendibility. This is further provided by evolvability and object oriented-ness. Object oriented-ness is provided by objects.



## Reliability

Reliability for SDMS includes Integrity, availability and accuracy. RDBMS and Efficiency strongly make integrity where as consistency also contributes to integrity. But using an RDBMS strongly decreases performance.



## Security

Security for the SDMS includes integrity, confidentiality and availability. The confidentiality includes authentication of a user is verified by a user name and password.



## Minimal Number of Negotiations

Minimal Number of negotiations is achieved by having three things together:

1. Take the start date and end date from the meeting initiator
2. Take the preference set and exclusion set from the meeting participants calendars
3. System automatically gives the preferred date for the meeting.
* If a date conflict occurs for an important participant, that meeting will be cancelled or a new round of negotiations are required.
* If a date conflict occurs with an optional participant, the participant will be automatically withdrawn from the meeting by the system.
* If a date conflict occurs with an active participant the meeting initiator is given a chance to decide on whether to change the active participant or start a new round of negotiations.



## Quick Conflict Resolution

## To achieve quick conflict resolution, it is required to have the following:

1. Categorize the participants into Important, Active and Optional.
2. Take preference sets and exclusion sets from the participants
3. System decides on the preferred meeting date in most of the situations