

SynergySoft  
**Meeting Scheduler System**



System Requirement Specification  
Version 3.0

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## Meeting Scheduler System

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## **1. Introduction**

### **1.1 Purpose**

Scheduling a meeting that involves diverse commitments and people from different background and with different preferences is a difficult task. A tool for scheduling a meeting provides a mechanism for better time planning and utilization. Applications of such a tool may adapt with the environment it is used in ex: a board meeting, business lunch, conference call, family reunion, movie night, group event, etc. SynergySoft Inc. aims to develop a meeting scheduling system that provides featured product to schedule and maintain meetings. The product primarily targets an enterprise as its market. The meeting scheduling system lets employees of an enterprise to schedule a meeting with other employees. The product is intended to ease the process of scheduling a meeting for increasing effectiveness of collaborative activities. Such a scheduling system is purported to increase awareness of relevant information of a meeting among concerned persons.

This document articulates the specification of the meeting scheduling system. It encloses the process of analysis and refinement of requirements. The document illustrates the resolution of inconsistencies, ambiguities, incorrectness, dependencies and other issues. The document clarifies how each requirement is deduced and how requirements are inter-related.

### **1.2 Scope**

Meeting scheduling system conceived by SynergySoft Inc. is determined for an enterprise and is a web based system. The system is to be used by the employees of an enterprise.

This document is intended for providing an overview of Meeting Scheduling System and general aspects of the project. The primary goal of the project is to facilitate user to schedule meetings with the available resources. This document encompasses related functional and non-functional requirements, architecture, stake-holders, etc necessary for specifying the system. The document provides explanations of the system that will be developed.

This document is prepared for SynergySoft Inc. by the students of The University of Texas at Dallas as a part of academic activity.

### **1.3 Glossary**

#### Acronyms:

EFR	Enterprise Functional Requirements
IS	Issue
ISA	Issue is Ambiguous
ISU	Issue is Unrealistic
ISI	Issue is Incomplete
ISR	Issue is Redundant
ISO	Issue is Out-of-scope

#### Nomenclature used:

<Issue Type> - <Number> [- <EFR/ENFR Number>]

Ex: ISA-1 - EFR-3

It means that this is the 1st issue, it is an Ambiguous issue and it refers to 'EFR no. 3'

#### Definitions:

*Meeting proposal:* An invitation to a meeting including the meeting agenda, date range, and duration that is sent to a list of potential meeting participants.

*Potential meeting participant:* A person who has been invited to a proposed meeting, but who has neither accepted ("will attend") nor refused ("will not attend").

*Active meeting participant:* A meeting participant who will be presiding over the meeting. This type of participant is one whose presence is essential for the meeting to be conducted.

*Exclusion set:* A set of dates on which participants cannot attend the meeting.

*Preference set:* A set of dates on which participants would prefer the meeting to take place .

*Date range:* a time interval established by the meeting initiator during which he/she would like the meeting to occur.

*Freeze time:* A period of 1 hour before the earliest of the dates specified in the date range.

*Virtual meeting:* A meeting held via teleconferencing.



### **1.4 References**

- Some part of this document has been re-used from documents uploaded at:  
<http://www.utdallas.edu/~chung/RE/Presentations06F/index.htm> - Team 1 and Team 4
- A part of the image used in the Meeting Scheduler System logo has been taken from [eei.epfl.ch/](http://eei.epfl.ch/)
- JavaScript calendar:  
<http://www.zapatec.com/website/main/products/prod1/>  
<http://www.scripts.com/viewscript/free-pikesys-event-calendar/14028/>

### **1.5 Overview**

This document is set out in order with IEEE 830 standard with some modifications. This document gives details for the meeting scheduling system by SynergySoft Inc. The document encompasses the resolution of each requirement inconsistency, ambiguity, and other concerned issues.

- Section 2: This section gives general description of the system involving various interfaces, characteristic of user, constraints, assumptions, dependencies.
- Section 3: This section articulates initial understanding of the system requirements. This section also discusses the issues with requirements and explains respective solutions.
- Section 4: This section articulates the improved understanding of the functional and non-functional requirements.
- Section 5: This section articulates about the future enhancements of the system.
- Section 6: This section articulates about the ideas picked from other team's presentation.
- Section 7: This section is Appendix that contains preliminary design for meeting scheduler system.

## **2. General Description**

SynergySoft Inc. intends to develop a featured application to support scheduling of a meeting. This application has potential usability for easing the process of meeting arrangement. Initially, the system shall be developed for an enterprise for meeting scheduling.

In an enterprise, meetings are frequent and involve a lot of overheads in its arrangement. Availability of meeting scheduler eases the scheduling process and hikes productivity in terms of time and work. The market holds many such systems and SynergySoft Inc. intends to outdo existing systems. To achieve this goal and attract the industry, the system should be simple, user friendly and easy to learn. The process for scheduling a meeting should involve minimal user interactions. The above should be considered for designing and implementing system.

### **2.1 Product Perspective**

The MSS is a meeting scheduler intended for the usage in an enterprise. The MSS is a web based application that requires authentication for scheduling meeting. MSS being a web based application; no extra software installation is required (at the client-side of the application) for an enterprise to use with the system. The system also sends relevant notifications and information to respective users through emails.

#### *2.1.1 System Interfaces*

The MSS shall be a web based system; hence it shall require the internet and/or network connection for accessing the system. The customer shall also require a server for deploying MSS. The MSS shall be accessible from any place variably according to the policy of the customer. The MSS also uses emails as a medium of communication; hence a company shall require an SMTP server or an exchange server. An enterprise shall also require a database system to store data for the MSS.

Following are required system interface for the MSS.

- Network and/or internet connection.
- Database system.
- SMTP or exchange server.

#### *2.1.2 User Interfaces*

The MSS shall be a web based system; hence the user shall be interacting with the system through a web browser.

#### *2.1.3 Hardware Interfaces*

The MSS shall not require any hardware interfaces.



### 2.1.4 Software Interfaces

Except from initial installations at the server and presence of a web browser at each client machine, the system shall not have any software dependencies and interfaces.

## **2.2 Product Functions**

### 2.2.1 Enterprise requirements:

This section describes abstract overview of the functional performance of the system. Functions supported by the system are organized by the user of the system and few other functions.

Refer to section 3.1 for detailed enterprise requirements.

The major users of the MSS are Initiator, Participants and Administrator. Initiators are users who initiate a meeting and participants are invitees of the meeting; whereas administrator is a person who deals with data and functionalities of the system. Each user can have more than one role.

#### 2.2.1.1 Initiator

- Initiator has maximum active participation during the process of meeting scheduling.
- Initiator is a user who initiates and finalizes the meeting.
- Only initiator is authorized to confirm/cancel a meeting, add or remove a participant, change room preferences.
- Initiator logs into the system and inputs preferences for dates of meeting and preferred rooms. Initiator can give up to three preferences for dates to organize a meeting and can select only available rooms i.e. two meetings can not be scheduled during same period of the time at the same location.
- The initiator submits his preferences and list of participants and asks participants for their acceptance or rejection, and so a list of participants' preference date list is created.
- After receiving feedback from participants, initiator takes the decision whether the meeting can be conducted or not. Initiator can request participants to submit preference set again as part of negotiations.
- Initiator can change date of meeting.
- Only initiator can take final decision regarding meeting occurrence.
- Initiator can reschedule a meeting.

#### 2.2.1.2 Participants

- Participants who received a request for a meeting can either reject or accept a meeting.
- If the participant rejects a meeting, he/she can provide two of his/her own preference set of dates (which is different from the initiator's date range) for the meeting.
- Participant can only select dates on which room selected is available.
- Participant must accept a meeting request before meeting Freeze time or give preference set before the Freeze time to let the initiator know of his/her intention of attending the meeting.

- Participant can accept/withdraw from the meeting any number of times, till the Freeze time.
- After meeting is scheduled, the participant should contact the initiator if he/she wants to attend or withdraw from the meeting.
- When a participant logs into the system, the participant sees preference dates submitted by initiator.
- Participant can give 2 (date-time) pair preference set only if he is not available on any of the dates mentioned by the initiator.

#### 2.2.1.3 Administrator:

- Administrator creates and maintains login details for users.
- Administrator can view data relevant to all meetings.
- Administrator can view data related to availability of rooms, their current status (booked/free) etc.
- Administrator can add/delete rooms.
- Administrator can add/delete equipments to rooms.

### **2.3 Constraints**

Constraints are restrictions or conditions that the system should comply with during development and execution. The system must be developed within the boundaries defined by constraints. All constraints must be followed during development of the system. Following are the constraints of the system.

- An active internet connection is required to access system.
- Participants have to be employees of the organization.
- Participants need to have a valid email address.
- Organization's employee database is required for the list of participants.
- Organization's infrastructure (meeting rooms and equipments) database is required for scheduling the meeting.
- Participants and the initiator shall not be allowed to modify rooms, resources and equipments data.

### **2.4 Assumptions and Dependencies**

- MSS only aims to schedule a meeting; it is not intended to determine the priority of a participant. The initiator shall be responsible in deciding the importance of participants.
- MSS shall not keep track of time-lines or daily schedules of each user.
- Priorities of meetings shall not determined by the system. In case a more important meeting has to be scheduled at the same time as a less important meeting, the initiators of both meetings shall have to personally contact each other to resolve the issue.
- MSS, being a web based application, can be used anytime and from anywhere where there is internet access. The system can also be accessed locally via company's intranet.
- MSS completely depends on availability of network and/or internet to schedule a meeting.

- MSS shall assume that each meeting location has all the required equipments in it and that there are different types of rooms each with its own set of equipments.
- The system assumes that the users shall be conversant with basic windows applications.

### **3. Semi formal Requirements: Preliminary Definition**

#### **3.1 Enterprise Functional Requirements: (Initial Understanding)**

The Functional Requirements of the proposed system as given by SynergySoft are as follows:

**EFR-1:** The Meeting initiator will ask all potential meeting attendees for set of dates they cannot attend the meeting (exclusion sets) and the set of dates they can attend the meeting (preference sets)

**EFR-2:** A meeting date shall be defined by a (Date, Time) pair.

**EFR-3:** The exclusion and preference set should be contained in some time interval described by the initiator.

**EFR-4:** The Meeting Initiator could ask the active participants to provide any special equipment requirements on the meeting location.

**EFR-5:** The Initiator may also ask important participants to state preferences about the meeting location.

**EFR-6:** The proposed meeting date should belong to the stated date range and to none of the exclusion sets.

**EFR-7:** The proposed meeting date should belong to as many preference sets as possible.

**EFR-8:** Conflicts can be resolved in many ways inclusive of the following options:

EFR-8.1: The initiator extends the date range.

EFR-8.2: Some participants remove some dates from their exclusion set.

EFR-8.3: Some participants withdraw from meeting

EFR-8.4: Some participants add new dates to their preference set.

**EFR-9:** Meeting room should be available at the selected meeting date.

**EFR-10:** Meeting room should meet the equipment requirements.

**EFR-11:** It is absolutely necessary to allow the meeting to take place in a virtual place (e.g.: teleconferencing)

**EFR-12:** The meeting initiator can be one of the participants or some representative (e.g. a secretary)

**EFR-13:** The purpose of SDMS is to determine, for each meeting request, a meeting date and location so that most of the intended participants will effectively participate.

**EFR-14:** The Meeting room should ideally belong to one of the locations preferred by as many important participants as possible.

**EFR-15:** The system shall:

**EFR-15.1:** Monitor meetings

**EFR-15.2:** Plan meetings under the constraints expressed by participants

**EFR-15.3:** Re-plan a meeting to support the changing user constraints

**EFR-15.3.1:** to modify the exclusion set, preference set and/or preferred location before a meeting date/location is proposed; and

**EFR-15.3.2:** to take some external constraints into account after a date and location have been proposed - e.g., due to the need to accommodate a more important meeting.

**EFR-15.4:** Support conflict resolution according to resolution policies stated by the client

**EFR-15.5:** Manage all the interactions among participants required during the organization of the meeting, like

**EFR-15.5.1:** to support the negotiation and conflict resolution processes;

**EFR-15.5.2:** to make participants aware of what's going on during the planning process

**EFR-15.5.3:** to keep participants informed about schedules and their changes.

**EFR-16:** The meeting scheduler system must in general handle several meeting requests in parallel I.e. even when these requests overlap in time or space.

## 3.2 System Functional Dependency Diagram (Preliminary)

Based on the analysis of the preliminary definition the functional dependency diagram of functional requirements is as follows:

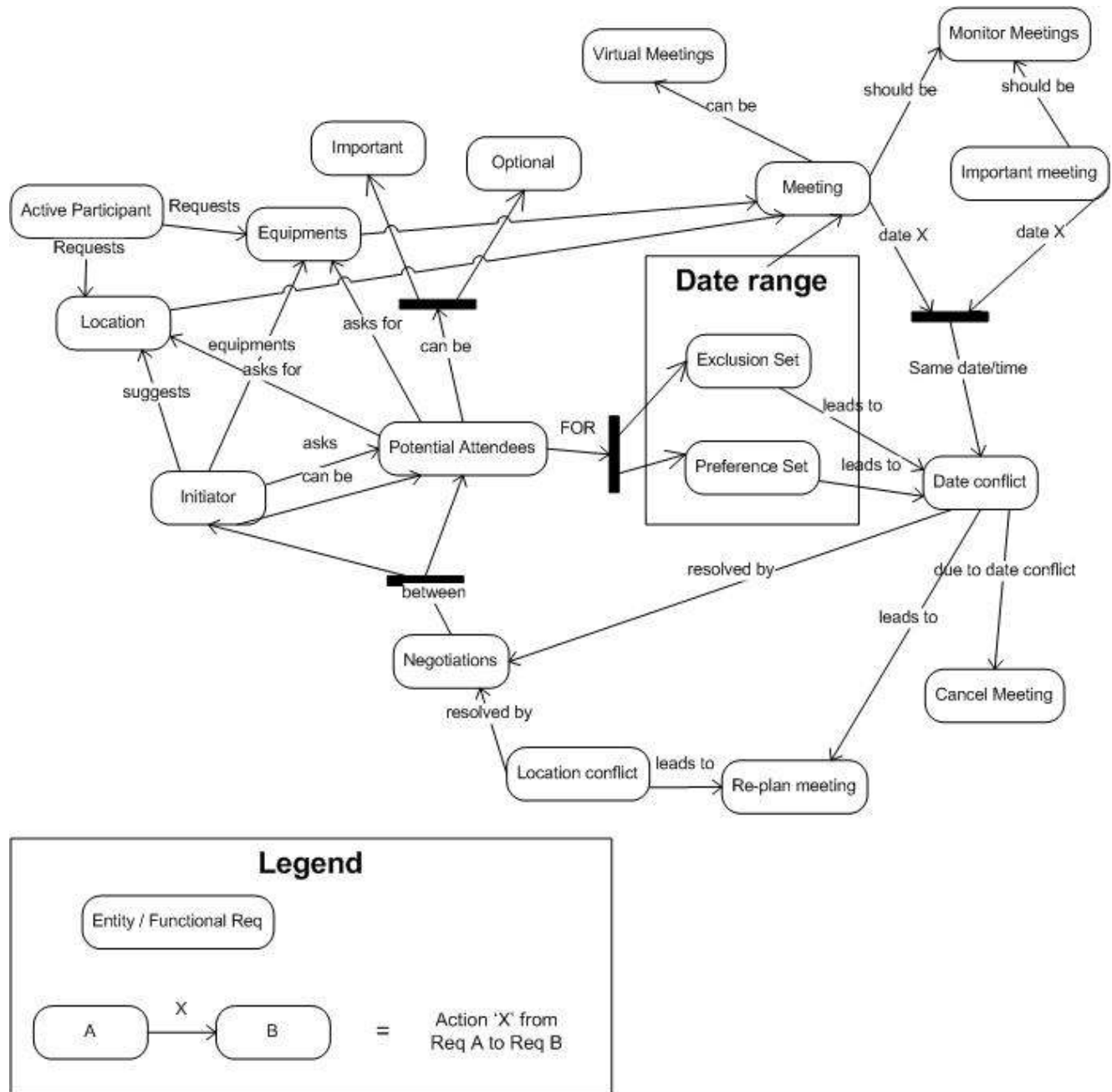


Fig: 1 Dependency diagram for the functional requirements.

### **3.3 Issues & Solutions (Functional Requirements)**

#### **Ambiguous Requirements:**

- **ISA-1-EFR-4:** The requirement states that the Meeting Initiator could ask the active participants to provide any special equipment requirements on the meeting location

It is an ambiguous requirement because of the word 'could' in the statement. The document does not state what happens if the initiator does not ask the active participants to provide equipment requirements.

#### Options:

1. The system takes the equipment requirements from each of the participants and allocates all of those equipments.

#### Advantages:

- Resource management will be handled by the meeting scheduler system itself and it won't be left as an overhead for the initiator to handle personally.

#### Disadvantages:

- The resource requirements of all active participants cannot be practically met especially if the participant count is large. E.g. if the number of participants is 300 and each requests for a set of headphones and the resource database has only 100 available, that preference set will not be considered for meeting scheduling only because of absence of headphones.
  - The importance of the resource would also be a matter of concern. Absence of an overhead projector is a valid reason to re-schedule a meeting but absence of pens and notepads for each person is not.
  - Another question the system will have to answer is whether to meet the resource requirements of ALL active participants or the active participants that are IMPORTANT. An important participant getting the desired resources is of higher priority than the unimportant participants.
  - The above questions can cause elimination of practically feasible preference sets for meeting scheduling and the system might never be able to schedule a meeting.
  - The scheduler system will have an addition overhead or maintaining a resource database.
2. Each room can be assumed to be having all the required equipments; viz overhead projector, workstation with webcams and microphones, network connection, telephone

#### Advantages:

- More preference sets would be considered rather than eliminated for meeting scheduling.
- More importance will be given to preference sets of participants rather than resource requirements.

- Overload of data to be managed by the system will reduce, if the system has to access some local application of the company for getting the resource details.
- Special resources, if required, could be specified as comments by the participants and the initiator can decide which requests to consider and which to ignore.

Disadvantages:

- Increased workload on the initiator to handle resource allocation.

Solution:

MSS assumes that meeting locations have all the required equipments (option 2).

- **ISA-2-EFR-5:** The requirement states that the Initiator may also ask important participants to state preferences about the meeting location.

This seemed to be an ambiguous requirement because of the word 'may' leads to two options – system 'will' ask the important participants or system "will not" ask any of the participants.

Options:

1. The system takes the location preferences of the important participants and uses it in further calculations to arrive at a common meeting place and time.

Advantages:

- The system will itself handle resource management and reduce initiator dependence.

Disadvantages:

- If the important participants are lesser in number than the other active participants then more number of people are at inconvenience to suit the convenience of lesser number.
- This can lead to additional rounds of negotiations as negotiations over locations of important participants will have to be exclusive of those of the rest of the active participants.
- If the company has a resource allocating software then the system needs to have additional utilities to interface with that software or build an entire resource management utility of its own. In either case the system is overloaded.
- If the important participants are spatially distributed then meeting all preferences will need another priority setting among the important participants, another overhead that can lead to increase in the number of negotiations.

2. The system does not take the location preferences of any of the participants to arrive at a common meeting place and time.

Advantages:

- It is easier to implement as there is no need to undertake resource management.
- Scheduling focus will be on dates and times and location decisions can be left to the initiator.
- There will be fewer rounds of negotiations.

- It is compatible with the case when the system does not differentiate between participants as important and unimportant.

Disadvantages:

- Increased initiator dependence
- If the important participants outnumber the rest of the active participants then important participants might have to compromise on their preferences sets which is undesirable.

Solution:

MSS does not allow participants to state preferences about the meeting location. This is done solely by the initiator.

1. The system will display only those rooms which are available on the date-time range specified by the initiator.
2. Any conflict in room availability may be resolved by verbal communication or administrator's intervention.

- **ISA-3-EFR-7:** The requirement states that the proposed meeting date should belong to as many preference sets as possible.

This is an ambiguous requirement statement since the definition of "as many preference sets" is not clear. Options that can be considered are - keeping a bound on the number of coinciding preference sets OR giving the initiator the best matches of preference sets and leaving it to the initiator to decide how many coinciding preference sets should be considered.

Options:

1. The system keeps a threshold of coinciding preference sets for a go ahead on meeting scheduling

Advantages:

- Initiator need not be considered with matching the preference sets.

Disadvantages:

- The bound cannot be kept rigid as different meeting will require different number of minimum attendees. It would lead to unnecessary additional data processing for the system
  - If the preference sets of an important participant falls outside the threshold range, the system might schedule the meeting, thus leaving out the important participant.
2. The system only presents the initiator with the best matches of the given preference sets sorted in decreasing order of number of participants.

Advantages:

- The initiator can decide for the bounds as well as the important participants and will be aided by the system with the best matching preference sets. Thus, one step can implement multiple requirements.
- The system is not needed to be fed with new bounds for every meeting.
- There will be lesser rounds of negotiations in scheduling a meeting.

Disadvantages:

- The initiator will be included in the decision making.



Solution:

We select the second option in our system because:

1. It has the advantage of incorporating more requirements in lesser number of steps and without overloading the system.
2. Since the goal of the system is to come up with the best match of preference sets for the initiator to schedule a meeting, the second option achieves it with optimum processing.

- **ISA-4-EFR-12:** The requirement states that the meeting initiator can be one of the participants or some representative (e.g. a secretary)

This is an ambiguous requirement as the document does not clearly specify who can be the Initiator and who cannot and whether the 'OR' is an Exclusive or Inclusive OR. Also, this leads to questions like "If the meeting initiator is some representative (e.g. a secretary), is it required for him/her to attend the meeting?" Also, if the Initiator is one of the participants, then is it necessary for him/her to fill in his Preference Set?

Options:

1. The Initiator can be a participant.
  - Initiator can initiate meetings as a participant and also as a representative of a prospective participant.
2. The initiator will not be a participant.
  - If a person has to initiate a meeting he wants to participate in, he has to initiate the meeting request through a third party who is not participating in the meeting.
3. The initiator must be a participant.
  - The initiator can only initiate requests for meetings that he has to attend and cannot generate meeting requests for others – initiator cannot be a representative of the participant.

Solution:

We choose the first option as it has a wider and more practical scope because the initiator can choose to attend or not attend the meeting he is initiating. MSS shall have different interfaces for the Initiator and the other participants. The initiator shall automatically be considered as a participant and his/her preference set shall automatically be set to the date-range given by him/her in the meeting request. Thus, MSS shall allow any authorized user to initiate a meeting and shall not consider whether the initiator is a participant or some representative of a participant

- **ISA-5-EFR-15.1:** The requirement states that the SDMS shall assist the users in Monitoring Meetings.

This is an Ambiguous functional requirement as the meaning of the phrase "Monitoring a meeting" is not well defined. "Monitoring" could be interpreted as

Options:

1. Monitoring changes in user schedules, exclusion sets, how they interact in the scheduled meetings
2. Recording the proceedings of the meetings in the form of Minutes of meeting.

Solution: Our assumption is that the phrase “Monitoring a meeting” refers to recording the meeting process as it happens. MSS shall allow a participant to upload the “Minutes of Meeting” in the system.

### Redundant Requirements:

- **ISR-6-EFR-1:** The requirement states that the initiator will ask all the potential attendees for Exclusion as well as Preference sets.

This is a redundant requirement as from the date range given by the Initiator if any date-time pair that is not in the Preference Set (when the participants 'will' be available) automatically comes in his/her Exclusion Set (when they will 'not' be available)

Solution: Our system is only concerned with the Preference Sets of participants, and hence does not ask participants to specify their Exclusion Sets. Use of both Preference as well as Exclusion sets might complicate the decision process for the initiator.

- **ISR-7:** The requirement document mentions two points, namely:
  1. To make participants aware of what's going on during the planning process; and
  2. To keep participants informed about schedules and their changes;

These two points seem redundant. Awareness of what is going on and informing participants about schedules and their changes mean the same thing.

Solution: MSS shall combine both of these requirements. MSS shall send email notification to the participants when a new meeting is planned for as well as each time the plan for scheduled meeting changes.

### Incomplete Requirements:

- **ISI-8:** The requirement document does not clearly specify anywhere the different types of participants.

Hence it is an Incomplete Requirement.

The document contains terms like “Important participant”, “Potential Attendees”, “Active Participants” etc. The roles played by each of the participant “types” is not specified anywhere.

The document specifies an “Active” participant, but his/her actual role has not been specified. Not only that, no difference has been made between an Active and an Important participant.

An Important participant could be considered as a person whose presence in the meeting is essential (without whom it is meaningless to conduct the meeting).

Options:

1. The Active participant could be considered as a person who has accepted the meeting invitation either by selecting one of the dates in the given date range or by specifying his/her own preference set.
2. He/she could also be considered as the person who will be presiding over the meeting.

Observe that the terms “Important” and “Active” participant can both be of the same meaning; i.e. a participant whose presence is essential for the conduct of the meeting and without whom a meeting cannot be conducted at all.

Solution: We have defined the different types of participants as follows:

- Potential meeting participant: A person who has been invited to a proposed meeting that has not either accepted (“will attend”) or refused (“will not attend”)
- Active meeting participant: A potential meeting participant who has accepted the meeting invite sent by the initiator

The concept of an Important participant has been dropped from further consideration to avoid unnecessary confusion.

- **ISI-9-EFR-4:** The requirement states that “the initiator could also ask the participants for a set of equipments for the meeting”.

The complete “list” of equipments is not specified in the requirements document. The document only mentions 4 items, viz; overhead projector, workstation, network connection and telephone. Also, which equipments in what corresponding quantity would suffice has not been mentioned in the document. Hence it is an incomplete requirement.

Another issue is how will the initiator “ask” the participants for the set of equipments. For this, there are at least 2 options:

- The participants can submit their equipment requirements via email to the initiator. This would make arrangement of equipments a cumbersome work for the initiator.
- Get the equipment requirements from the users when they log in to the system to confirm their dates

Options:

1. We assume that there are only 4 equipments that are ever needed for any meeting.  
Advantage:  
This would temporarily simplify the scheduling process since the number of equipments to deal with is small.  
Disadvantage:  
It is limiting in the sense that all meetings will have to make do with only these four equipments.
2. Besides these 4, there are other equipments that might be needed. In this case we need to consult the customer to elicit the complete list of equipments.
3. The participants can submit their equipment requirements via email to the initiator.  
Advantage:  
This would bring in flexibility to meetings in the sense that it allows the specification of the complete list of equipments that might be required for a meeting.  
Disadvantage:  
It would make arrangement of equipments for a meeting, a cumbersome task for the initiator.
4. The participants can select from the available equipments or specify new equipments when they are confirming their presence in the meeting after logging into the system.  
Advantage:  
With this, the advantage over the previous option is that the initiator can see all the equipment requests in one place rather than having to go through the emails of all participants.  
Disadvantage:  
It would still make the arrangement of equipments for a meeting a cumbersome task for the initiator, since the list of equipments might increase to large sizes because some participants might specify equipments that are not quite required for the meeting.
5. Only the Active participant can be allowed to specify the equipment requirements.  
Advantage:  
This is a feasible option because since the active participant is the main presiding member in a meeting (according to our definition) and he/she is the best person to know what equipments might be required for the meeting.  
Disadvantage:  
It might lead to the problem of large number of equipment requests.
6. Each meeting room could be assumed to have a set of equipments that may be required for a meeting (like an overhead projector, workstation with web cams and microphones, network connection and a telephone).  
Advantage:  
This simplifies the equipment arrangement overhead for the initiator.  
Disadvantage:  
It restricts the type of equipments that could be used for a meeting. It has very little flexibility.

Solution: MSS uses a combination of the last two options. When the initiator initiates a meeting, he/she selects a particular room. Associated with each room is a set of equipments. Additionally, the active participant(s) is also allowed to request any additional equipment(s) that might be required for the meeting. With this, MSS tries to achieve the best of both worlds: Associating equipments with each room as well as allowing only the active participants to request more equipment. This allows flexibility as well as keeps the equipment requirement list small.

- **ISI-10-EFR-11:** The requirement states that “It is absolutely necessary, however, to allow each meeting to take place in a virtual place”

This requirement is Incomplete as a thorough definition of a “virtual” meeting has not been given except for an example of teleconferencing through laptop computers.

Solution: MSS shall assume that a virtual meeting to be only teleconferencing and shall allow the Initiator to select room as “virtual” for scheduling a virtual meeting.

1. The scope of the system is limited to scheduling meetings.
2. The system can be linked with Third party software for virtual meetings like voice chat or video chat.

- **ISI-11-EFR-15.4:** The requirement states that “the system shall support conflict resolution according to the policies stated by the client”

This is an Incomplete Requirement as there are no such conflict resolution 'policies' defined anywhere in the Requirements Document.

Solution: More information from the client is required to resolve the issue. The client resolution policy might be a refinement of conflict resolution policy as mentioned in EFR-8 and its sub-points. MSS shall make no assumptions regarding the conflict resolution policy.

- **ISI-12:** The Requirement Document states that “In all cases some bound on re-planning should be set up.”

This is an Incomplete Requirement because there is no mention of what the “bound” is.

The “bound” could mean that

- The time required in re-planning should be controlled. This means that the initiator/participants should spend very less time in re-planning a meeting in case of conflicts.
- The time limit before which a re-planning decision has to be made has to be controlled. This means that if a conflict arises, then the decision of whether or not to re-plan a meeting has to be taken by a pre-specified time.
- The number of re-planning attempts should be controlled. This means that there should be some control on how many times a particular meeting could be re-planned.

Solution: MSS allows the participant to change his schedule only till 1 hour prior to the expected meeting date. That is, 1 hour before the first date-time in the preference set, preference sets given by all participants are frozen and they can no longer make any changes to it.

1. If the initiator sees during this last hour that the participants have changed their preference sets in such a manner that there is no consensus on the preference sets, the initiator can re-plan the meeting. Thus there is a time-based upper bound on re-planning. But note that a meeting on the whole can be re-planned (re-scheduled) as many times as required.
2. Such a re-planning involves stopping the scheduling process for the current date-range and starting all over with a new date range being supplied by the initiator.
3. The reason for not keeping an upper bound on the number of times a meeting could be re-planned is because, some meetings might be important and have to be conducted irrespective on the number of times conflicts arise. Hence it is not a good design feature to restrict the number of re-planning attempts.

### Unrealistic Requirements:

- **ISU-13-EFR-5:** EFR-5 states that the Initiator may also ask important participants to state preferences about the meeting location.

#### Option:

1. The system takes the location preferences of each of the participants and uses it in further calculations to arrive at a common meeting place and time.

#### Advantage:

- This allows accommodating preferences from all users and system is more flexible in terms of location selection.
- This allows initiator to come to a decision regarding selection of a meeting location that it is convenient to more number of participants.

#### Disadvantage:

- It creates an overhead for the initiator to take a decision regarding room selection for a meeting.
- This feature makes the system more complex in terms of the room selection for a meeting, and resolving conflicts between various participants for room preferences. Different participants give their preferences that might create complex conflicts in various perspectives like importance of participant's presence, involvement of a participant to a discussion, etc. This scenario makes system complex.
- The room selection might be over-weighted by unimportant participants. To resolve this initiator have to consider trade offs and put extra effort to resolve. This makes system complex to handle.

2. Only one authority takes decision of room location for a meeting.
  1. A participant takes decision  
Advantages:
    - This option provides flexibility to take decide room location for a meeting.Disadvantages:
    - It's difficult to decide which participant will take decision.
    - It's difficult to decide who decides participant that should be able take decision for a room location.
    - The participant is unaware of the importance of all participants for a specific meeting, so the decision taken might not be appropriate.
  2. An active participant takes decision  
Advantage:
    - This option provides flexibility over decision for a meeting room.
    - Active participant holds implicit importance in the meeting so should be able take decision in this regards.Disadvantage:
    - It is not clear who takes the decision as to which active participant gives the location preference and who should be held responsible for such a decision.
    - Active participant is not aware of all participants and importance of each participant, so decision may not be appropriate.
  3. Initiator takes decision  
Advantage:
    - Major authorities are confined by initiator and so the meeting location should be decided by initiator.
    - Initiator is authorized person to communicate with any participant, and can take appropriate decision.Disadvantage:
    - System is restricted to one authority for each decision.
    - System does not consider importance of active participant's involvement to take decision for meeting room

Solution: To resolve this issue, we considered following salient note.

- Active participant is an important candidate for a meeting.
- System should be flexible in order to take decision regarding meeting room.
- Who decides participant or active participant is potential candidate to decide room location for a meeting.
- Initiator is an authority to major decision.

The above concerns should be considered while making the decision regarding room location. Active participants are important to a meeting but may not be instrumental in making the decision for a meeting room, and also initiator will have to take decision which active participant can take decision and which

participant is active. So, only initiator shall be able to take decision for a meeting room.

- **ISU-14-EFR-8.1:** The requirement states that when there is a conflict of dates, one of the ways it can be resolved is the meeting initiator extending the date range.

Options:

1. Allow initiator to extend range of date for a meeting.

Advantage:

- System becomes flexible to change.
- More number of participants can be involved in meeting.
- Important participant can be involved in a meeting.
- A conflict caused by preference set of date from participant and initiator can be resolved.

Disadvantage:

- Each participant may have to react to the change in date range.
- Participants' schedule may get disturbed because of change in date range and may even be left unutilized.
- As a response to modification from the initiator, participants may change their preference set and conflict may be left unresolved.

2. Initiator should not be allowed to extend the date-range for a meeting.

Advantage:

- The participants do not have to alter their schedule.
- The participants' schedule is not disturbed.

Disadvantage:

- System is becomes very rigid and conflict may not be resolved.
- Important participants will be left excluded from the meeting.
- Major number of participants is not included in the meeting.

Solution: To come to a solution, the following points should be considered.

- The initiator should be able to extend date range to accommodate more participants and/or important participants.
- Date range extension should not affect participants' schedule much.

Considering above trade off, an initiator must be able to extend date range for a meeting, but some restrictions must be applied to the date before change can be incurred and how many times the initiator can extend date range. This will reduce the effect to the participant caused by date range extension.





- **ISU-15-EFR-8:** The requirements EFR-8.2 and 8.4 state that when there is a conflict of dates, one of the ways it can be resolved is for the participants to change their Preference or Exclusion Sets.

This is an unrealistic requirement. The reason for this is the same as that for Issue No. ISU-14.

Solution: The solution for this issue is also the same as that for issue no ISU-13.

### **3.4 Enterprise Non-Functional Requirements (Initial Understanding)**

The Non-Functional requirements of the proposed system as given by SynergySoft are as follows:

- ENFR-1.** A meeting should be accurately monitored, especially when it is held in a virtual place. Here, nomadcity will then be important to consider;
- ENFR-2.** Replanning of a meeting should be done as dynamically and with as much flexibility as possible;
- ENFR-3.** The amount of interaction among participants(e.g., number and length of messages, amount of negotiation required) should be kept minimal;
- ENFR-4.** The intended system should considerably reduce the amount of overhead usually incurred in organizing meetings where potential attendees are distributed over many different places and communicate with each other, for example, via Internet;
- ENFR-5.** The system should reflect as closely as possible the way meetings are typically managed (see the domain theory above);
- ENFR-6.** The meeting date and location should be as convenient as possible, and available as early as possible, to all (potential) participants;
- ENFR-7.** The system should accommodate as much decentralized requests as possible; any authorized user should be able to request a meeting independently of her whereabouts;
- ENFR-8.** Physical constraints should not be broken --- e.g., a person may not be at two different places at the same time; a meeting room may not be allocated to more than one meeting at the same time; etc.;
- ENFR-9.** The system should provide an appropriate level of performance:
  - ENFR-9.1.** the elapsed time between the submission of a meeting request and the determination of the corresponding date/location should be minimal; or ...; or
  - ENFR-9.2.** a lower bound should be fixed between the time at which the meeting date is determined and the time at which the meeting is actually taking place.
- ENFR-10.** The system should be usable by non-experts;
- ENFR-11.** The system should be customizable to professional as well as private meetings;
- ENFR-12.** The system should be flexible enough to accommodate evolving data e.g., the sets of concerned participants may be varying, the address at which a participant can be reached may be varying, etc.;



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**ENFR-13.** The system should be easily extensible to accommodate the following typical variations:

- ENFR-13.1.** handling of explicit priorities among dates in preference sets; ...;
- ENFR-13.2.** variations in date formats, address formats, interface language, etc.;
- and
- ENFR-13.3.** Partial reuse in other contexts - e.g., to help establish course schedule.

## 3.5 System Non Functional dependency diagram (Preliminary)

Based on the analysis of the preliminary definition the functional dependency diagram of non-functional requirements is as follows:

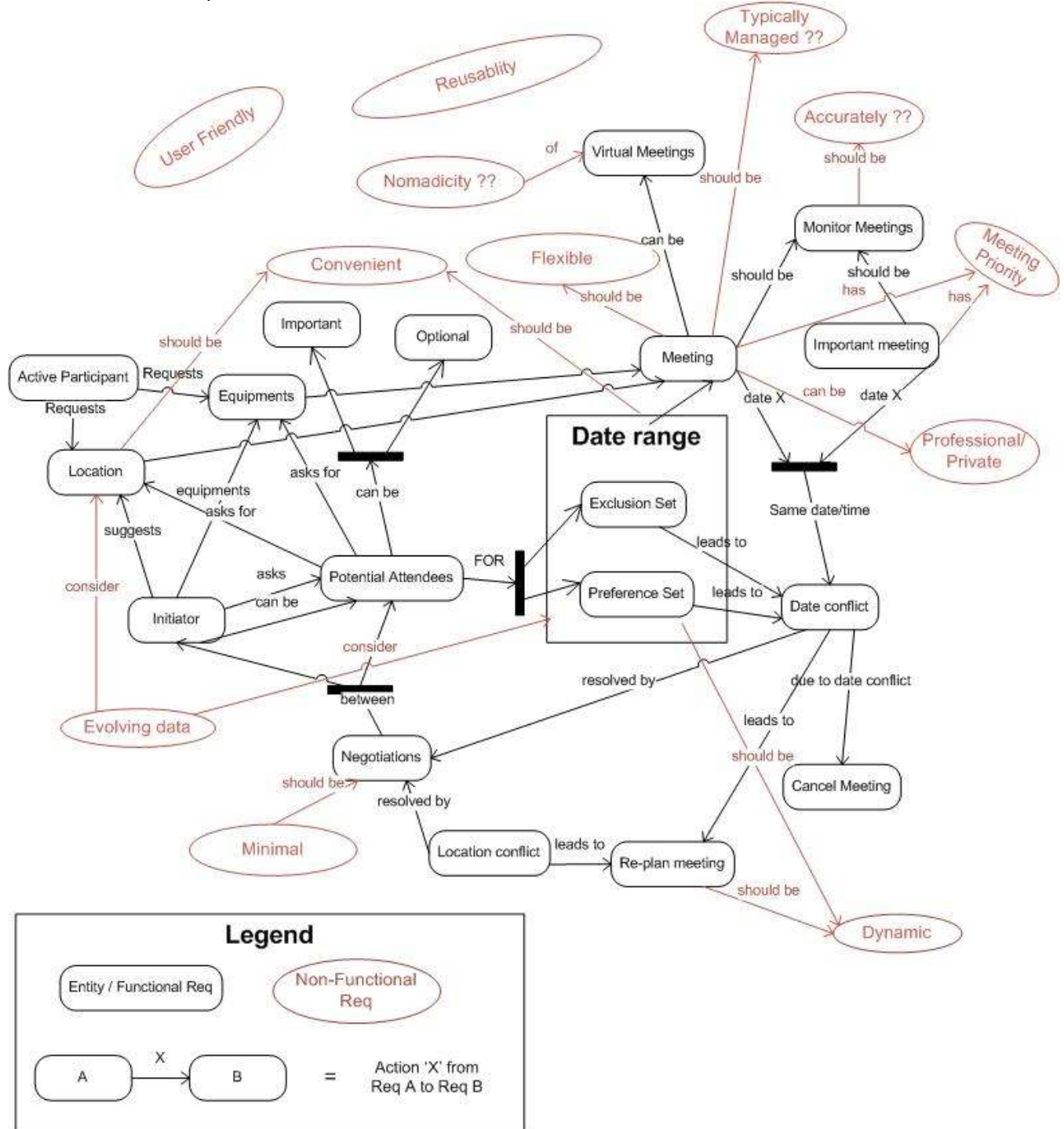


Fig: 2 Dependency diagram for the non- functional requirements.

### **3.6 Issues & Solutions (Non-Functional Requirements)**

#### **Ambiguous**

- **ISA-1-ENFR-1:** The requirement states that “A meeting should be accurately monitored, especially when it is held in a virtual place. Here, nomadicity will then be important to consider;”

It is an ambiguous requirement because of the words “accurately monitored” and “nomadicity”.

“Monitoring” could be interpreted as monitoring changes in user schedules, exclusion sets, how they interact with scheduled meetings or “Monitoring” the proceedings of the meetings.

The term “nomadicity” is not defined elsewhere. Can interpret as a participant changing the location

#### Options:

- Add a new requirement concerning monitoring module.
- Allow user to enter “Minutes of Meeting” and location information manually and allow enough space for teleconferencing phone number, pin.

Solution: The system shall allow user to enter “Minutes of Meeting” and location information manually and allow enough space for teleconferencing phone number, pin and server id etc. It would be difficult for the system to track the changes the user’s schedules and location information. The system is only concerned with the current state (Preference Sets) of the participants.

- **ISA-2-ENFR-2:** The requirement states that “Replanning of a meeting should be done as dynamically and with as much flexibility as possible”

The terms “flexibility” and “dynamically” can very subjective. They can be interpreted as:

#### Options:

- Allow users to change their date-time-room preference, and equipments etc any number of times.
- Allow users to change their date date-time-room preference, and equipments etc limited number of times.
- Allow changes in only date-time-room preferences.
- Allow to change only equipments.

Solution: Our system allows users to change their date-time preferences limited number of times i.e. 2 times.

Also the participant can change his response to the meeting request ‘n’ number to times before the freeze time.

Our system assumes that every room has equipments associated with it and thus participant shall not be asked for the required equipments.

- **ISA-3-ENFR-3:** The requirement states that “The amount of interaction among participants should be kept minimal.”

The term “minimal” is a very relative term.

Options:

- Set a value that indicates the minimum.
- Let the meeting initiator decide this minimum based on the importance of the meeting.
- Add a calendar function that allows the meeting initiator to view all participants calendars .This eliminates the interactions involved in collecting preference and exclusion sets.

Solution: The system shall have 1 round of negotiation after the initial phase in which the participants give their preference sets, but before confirming the meeting schedule. If more rounds of negotiations are provided, then meeting gets procrastinated.

With the 3<sup>rd</sup> option, it would become cumbersome for the initiator to come to a conclusion regarding the meeting date. There will be an information overload.

- **ISA-4-ENFR-10:** The requirement states that “The system should be usable by non-experts”

The term non-expert is very subjective. It is difficult to determine the user’s level of knowledge regarding Computers.

Solution: The system assumes that the users shall be conversant with basic windows applications. The User Interface shall be designed in a way to be self-intuitive.

- **ISA-5-ENFR-11:** The requirement states that “The system should be customizable to professional as well as private meetings”.
- The term “professional” and “private” is ambiguous as no definition of these 2 terms is given.

Options:

- Add features to enable a user to differentiate between professional / private meetings by providing different types of templates for messages sent by system to participants by email.
- Make no difference between professional/private meetings.

Solution: The software system shall not be concerned with nature of the meeting whether formal/informal, professional/private. Any authorized user can schedule a meeting using the software system. This is done to make the User Interface simple and easy to use (ref. ENFR-10)

## Redundancy

- **ISR-6-ENFR-4:** The requirements states that “The intended system should considerably reduce the amount of overhead usually incurred in organizing meetings where potential attendees are distributed over many different places and communicate with each other, for example, via Internet;

The term “reduced overhead” could be interpreted as “Minimal interactions”. The statement also mentions that the system should reduce the overhead involved when participants (who are distributed over many places) communicate with each other. MSS shall not allow participants to communicate with each other through the system, effectively eliminating intra-participant communication overhead.

Solution: The system shall have 1 round of negotiation after the initial preference date collection phase, but before confirming the meeting schedule.

## Incompleteness

- **ISI-7-ENFR-6:** The requirement states that “The meeting date and location should be as convenient as possible and available as early as possible, to all (potential) participants”

The term “potential” participant has not been defined completely. The meeting initiator sends proposed meeting details to all the intended attendees. There is an overlap between “potential” or “active” participants.

There are multiple ways to meet this requirement:

- The initiator should find out a date-time and location for the meeting that might be convenient to all the participants.

Advantage:

This is advantageous in the sense that there is a centralized control over the meeting date, time and location.

Disadvantage:

It is a difficult process for the initiator, since he/she has the responsibility of finding a suitable date, time and location triplet that is convenient for all participants.

- The participants should have full control over the meeting date, time and location.

Advantage:

This is advantageous in that there is flexibility for each participant to specify his/her own preferred date, time and location for the meeting.

Disadvantage:

The biggest disadvantage here is that it becomes almost impossible to reach a consensus on the meeting date, time and location since the entire selection process is decentralized and hence may go out of control.

Solution: MSS combines both the above options to solve the problem.

The initiator initially selects the date-range and the meeting location for each date in the date-range. The invited attendees then either accept or reject the dates from this date range. MSS brings in some flexibility here in that it allows a participant to select from the available list of dates in the date range (which automatically implies selection of a particular location too). When an attendee selects a particular date in his/her preference set, the system assumes that that date, time and location is convenient to that person. So when a majority of participants arrive at a consensus on the meeting date, time and location, the system assumes that date, time and location is convenient for the majority of the participants. It is difficult (almost impossible) to arrive at a date, time and location that is convenient for ALL the participants.

### Unrealistic

- **ISU-8-ENFR-12:** The requirement states that “The system should be flexible enough to accommodate evolving data e.g. the sets of concerned participants may be varying”

The term flexible is subjective and can be interpreted in more than one way. Also the evolving data sets are not testable.

Options:

- Allow initiator to update the number of meeting participants and add their Preference sets.
- Allow Initiator to decide on the number of participants and accept 2 date, time pairs from each of them.

Solution: The “flexibility” requirement contradicts the “minimal interactions” requirements because if the number of participants keeps varying then the number of necessary negotiation may increase too. The initiator decides on the number of participants and sends them proposed meeting details. The participant can select or suggest not more than 3 date time pairs.



## 4 Improved understanding

### 4.1 Functional Requirements

1. Any user is allowed to initiate a request for a new meeting using the MSS (*ref. EFR-12*), provided he/she is registered with the system. A user who initiates a meeting is referred to as the Initiator. To initiate a new meeting, the initiator shall provide the following as input to the MSS:
  - Agenda of the meeting.
  - Date-range, consisting of three 'date and time' pairs (*ref. EFR-1, EFR-2*)
  - Participant list
  - Active participant (if any).
  - Room (one for each date) for the meeting to be conducted in. (*ref. EFR-5*)
  - Duration of the meeting.
2. The meeting scheduler system shall be able to support several meeting requests in parallel, but ensures that multiple meetings are not scheduled in the same time-slot in the same room. (*ref. EFR-16*)
3. The system shall categorize the meeting rooms into auditoriums, conference rooms; board-rooms etc and also assume that each meeting room has all the necessary equipments in it for a meeting. (*ref. EFR-4, EFR-10*)
4. The system shall ensure that the initiator only selects rooms that are available on the selected dates. (*ref. EFR-9*)
5. The system shall allow the Initiator to schedule virtual meeting by selecting the meeting room as "Virtual". The system shall then prompt Initiator to enter Teleconference Number and Pin.
6. When the Initiator confirms the date-range, participant list and the rooms, the system shall send an email to all the participants informing them of the new meeting request. (*ref. EFR-15.5.2, EFR15.5.3*) This email shall inform the participants that a new meeting request has been made. The participant shall then have to log in to MSS to take further action regarding the meeting request.
7. Each participant (after he/she logs in to MSS) shall be shown the meeting request, along with the date-range specified by the initiator.
  - The participant shall be allowed to select from one or more dates from the date range to confirm his/her intention of attending the meeting. This set of dates forms the participant's Preference set. (*ref. EFR-1*).
  - The participant shall be allowed to decline the invite for the meeting in case he/she is not able to attend the meeting on any of the dates in the date-range specified by the initiator; the participant shall be allowed to specify 2 new dates as his/her Preference Set. (*ref. EFR-1, EFR-8.4*)
8. Each active participant shall be shown the meeting request, along with the date-range specified by the initiator.

- The active participant shall be allowed to select from one or more dates from the date range to confirm his intention of attending the meeting. This set of dates forms the participant's Preference set. (*ref. EFR-1*).
  - The active participant shall be allowed to request any specific equipments required for the meeting.
  - The active participant shall be allowed to decline the invite of the meeting in case he/she is not able to attend the meeting on any of the dates in the date-range specified by the initiator; the active participant shall be allowed to specify 2 new dates as his/her Preference Set. (*ref. EFR-1, EFR-8.4*).
9. The freeze time shall be one hour before the earliest of the 3 date-time pairs specified by the initiator. The system shall allow the Initiator to confirm or reject the meeting; failing to do so, the meeting request would stand cancelled and the initiator shall have to create new meeting request.
10. The system shall allow the Initiator to view the response of every participant.
11. The system shall allow the Initiator to decide whether to confirm the meeting schedule, re-negotiate, re-initiate or cancel the meeting. This decision shall depend solely upon the initiator's wish; the system shall not make a decision. (*ref. EFR-6, EFR-7, EFR-13, EFR-14, EFR-15.5.2, EFR-15.5.3*)
12. The system shall send a notification mail to the participants when the Initiator confirms the meeting schedule. This email shall inform the users about the meeting agenda, the starting date and time, the duration and the participant list.
13. The system shall allow the Initiator to re-negotiate on the date-range only once.
14. The system shall allow the Initiator to re-negotiate till 3 hours before the earliest of the 3 date-time pairs specified by the initiator
15. The system shall allow the Initiator to re-negotiate on date range and room with participants by sending 3 dates selected from the Preference sets of all the participants.
16. The system shall allow the participants to view the re-negotiated date range and select one or more dates from the date range to confirm his intention of attending the meeting. This set of dates forms the participant's new Preference set.
17. The system shall allow the participants to accept or withdraw from a meeting any number of times prior to the freeze date. (*ref. EFR-15.3.1, EFR-8.3*)
18. The administrator of the system shall be able to manage accounts of the users. This task shall include authorizing access to the system, adding / deleting user accounts and meeting requests, adding / deleting meeting rooms, view data relevant to all meetings, view data related to availability of rooms (booked / free) and add / delete equipments to / from meeting rooms.

#### **4.2 Non-Functional Requirements**

1. The meeting scheduling process is flexible in the sense that the participants are allowed to change their Preference Sets any number of times until the Freeze date. (*ref.* ENFR-2)
2. Presently, the participants (other than the initiator) shall not be able to interact with each other through the system. (*ref.* ENFR-3). In future versions provisions for such an interaction are planned.
3. The system shall accommodate as much decentralized requests as possible; any authorized user should be able to request a meeting independently of her whereabouts; (*ref.* ENFR-7)
4. Physical constraints shall not be broken. The system makes sure that a meeting room may not be allocated to more than one meeting at the same time; (*ref.* ENFR-8)
5. The system should be easy to use; (*ref.* ENFR-10)
6. The system can be used to schedule any meeting irrespective of its nature, whether formal/informal. (*ref.* ENFR-11)
7. All the Preference sets shall have same priority. (*ref.* ENFR-13.1)
8. The system shall use English as Interface language. (*ref.* ENFR-13.2)
9. The system modules can reused for various scheduling scenarios e.g. scheduling courses and flights, room assignments at hospitals and hotels. (*ref.* ENFR-13.3)

## 4.3 Functional Dependency Diagram

Based on the analysis of the improved understanding the functional dependency diagram of functional requirements is as follows:

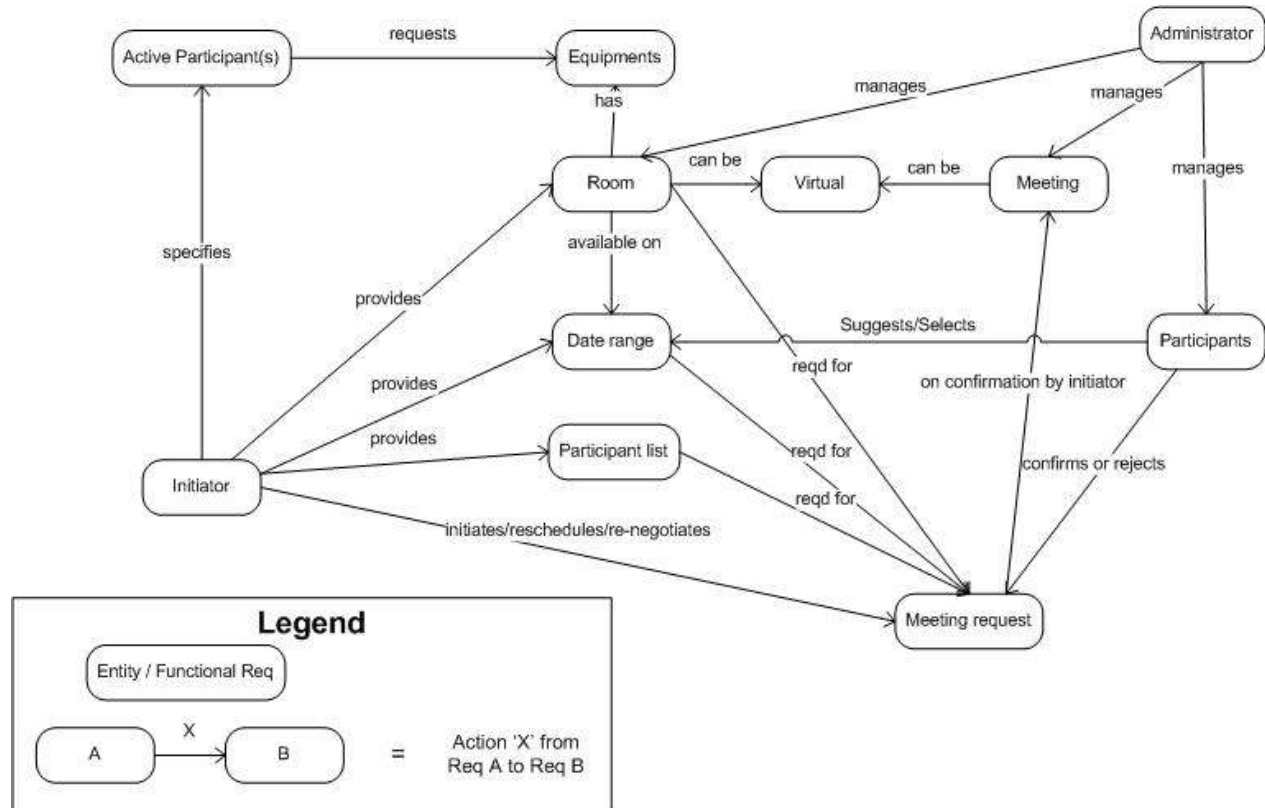


Fig: 3 Dependency diagram for the **Improved** functional requirements.

## 5 Future Enhancements

Due to time and resource constraints, the scope of the system has to be restricted. Thus the following features can be implemented as enhancements in future versions of the system.

1. Reducing the dependency on the initiator in terms of scheduling the meeting and conflict resolution.
2. Allowing participant to communicate amongst each others for negotiating on preference sets.
3. Increasing the number of rounds of negotiation before confirming the meeting.
4. Implementing time-zone conversions so that the initiator need not convert the date-time pairs in the preference sets of the participants. The system will automatically display the particular zone's corresponding time.
5. Adding third party software to monitor meeting in real time e.g. Chat rooms for meetings, Screen-sharing utility.
6. Considering participants importance while scheduling a meeting.
7. Assigning a priority for every meeting to handle the location and date-time conflict in a better way.
8. Accepting equipment requests from every participants.

## 6 Ideas picked up from other teams

1. **Time zone conversions:** The system allows the initiator to inform the participants about the time-zone of the date-time range pairs sent to them. This avoids the confusion among the participants from different geographical locations. This feature will be implemented in the next release of the Meeting Scheduler System.
2. **Categorizing rooms:** Initiator may not be aware of the entire infrastructure available within the organization. Categorizing the room into different types enables the initiator to select the room as per his need (occupancy limits and equipment requirements).  
We have categorized the rooms as:

- a. Auditorium
- b. Conference room
- c. Board room.

The rooms and equipments' data will be picked from the organization's infrastructure database and only the MSS administrator will be authorized to manage the data.

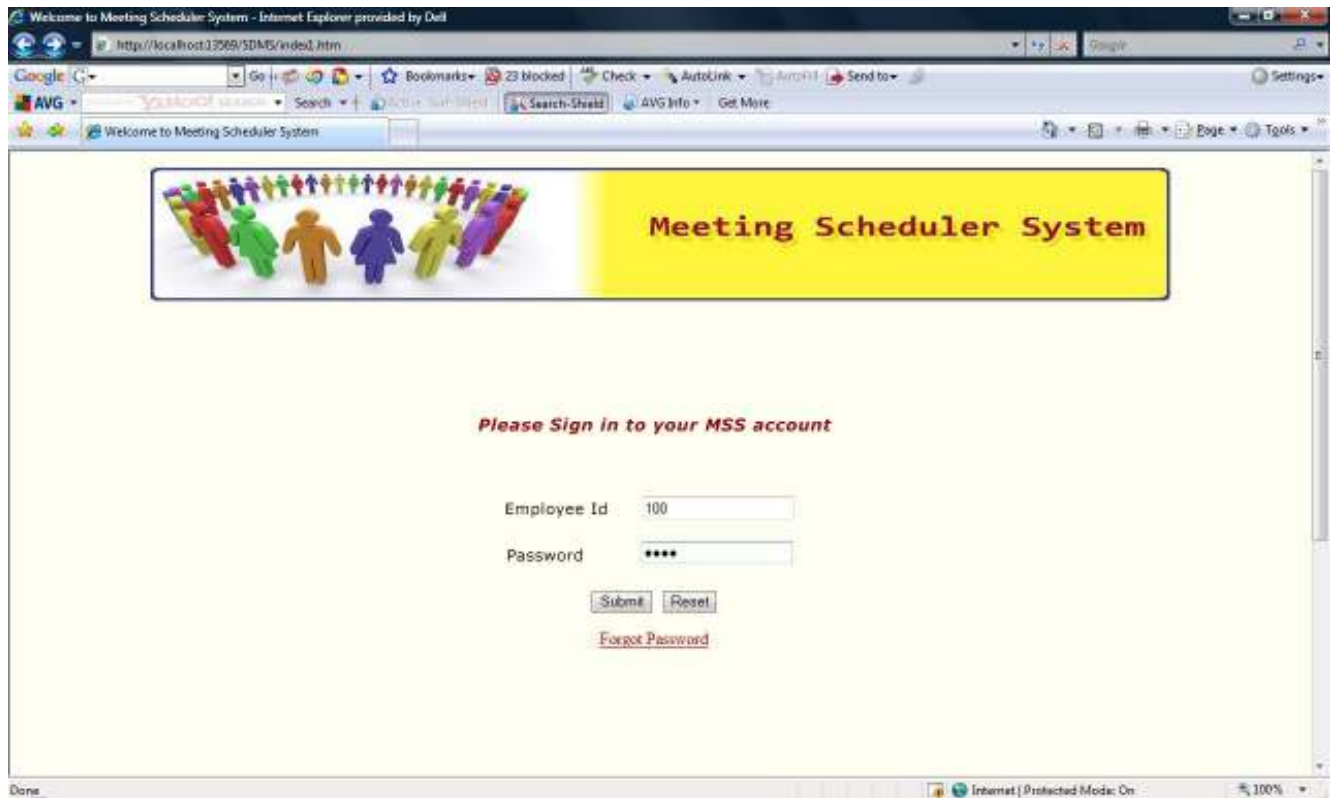
3. **Responsibilities of the Administrator:** Initially we had assigned few tasks to the Administrator like managing login details for users and allowing access to view meeting data.

Now we have added more responsibilities to the Administrator role. An administrator can

- Setup the interface between organization's database and MSS database.
- view data related to availability of rooms, their current status (booked/free) etc.
- add/delete rooms
- add/delete equipments to rooms

## 7 Appendix A - Mock-ups

1. Login Page – the user can log into system using employee id.





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## 2. The Home Page

Welcome to SDMS User #1 - Internet Explorer provided by Dell  
http://localhost:13959/SDMS/welcome.jsp

Meeting Scheduler System

Welcome, Arvind

Sign out

Sun	Mon	Tue	Wed	Thu	Fri	Sat
September S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	November S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Global Address Book  
Schedule New Meeting  
Review Meeting request  
View Meeting Invites

Done Internet | Protected Mode: On 100%



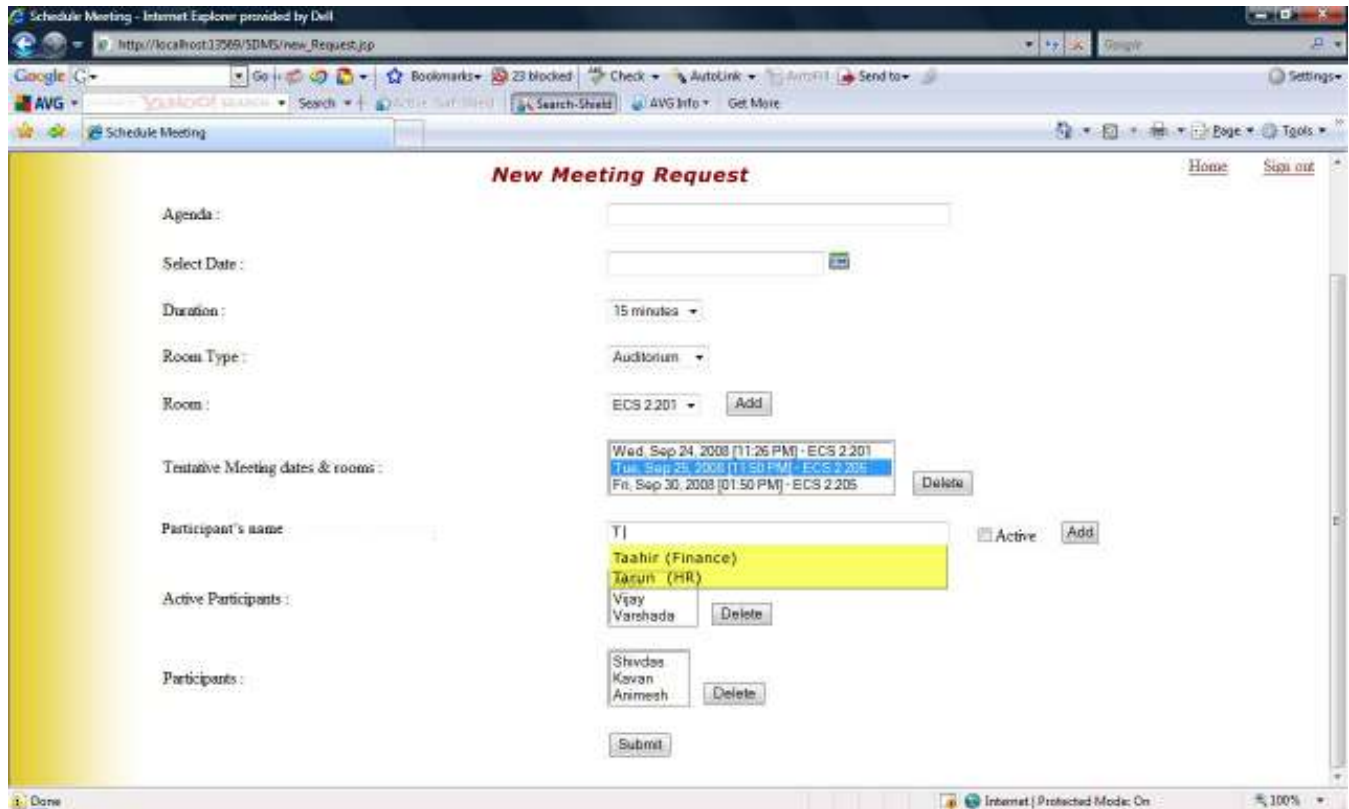
### 3. Search for 'Existing Meeting Request'



The screenshot shows a web browser window displaying the Meeting Scheduler System interface. The page title is "Existing Meeting Requests". There is a search form with fields for "Meeting Id", "From", and "To", and a "Select Room" dropdown menu set to "ECS 2201". Below the search form, a table displays the search results.

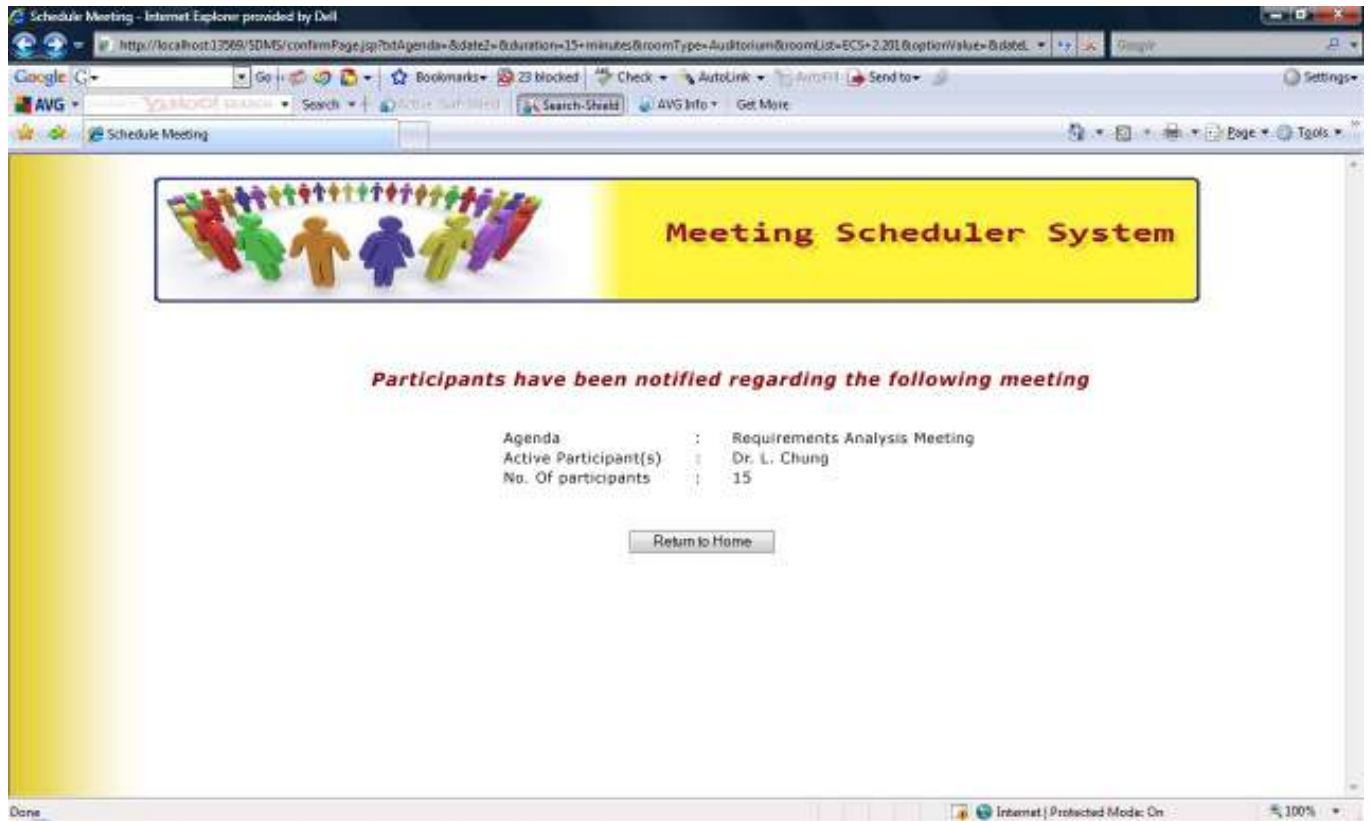
Search Result	
Click on Meeting ID to view results	
Meeting Id	Agenda
<a href="#">1000</a>	Requirement Analysis Meeting
<a href="#">1001</a>	Test report Meeting
<a href="#">1009</a>	Client Meeting

4. New Meeting Request – the user can select date-time, room and participants and active participant.



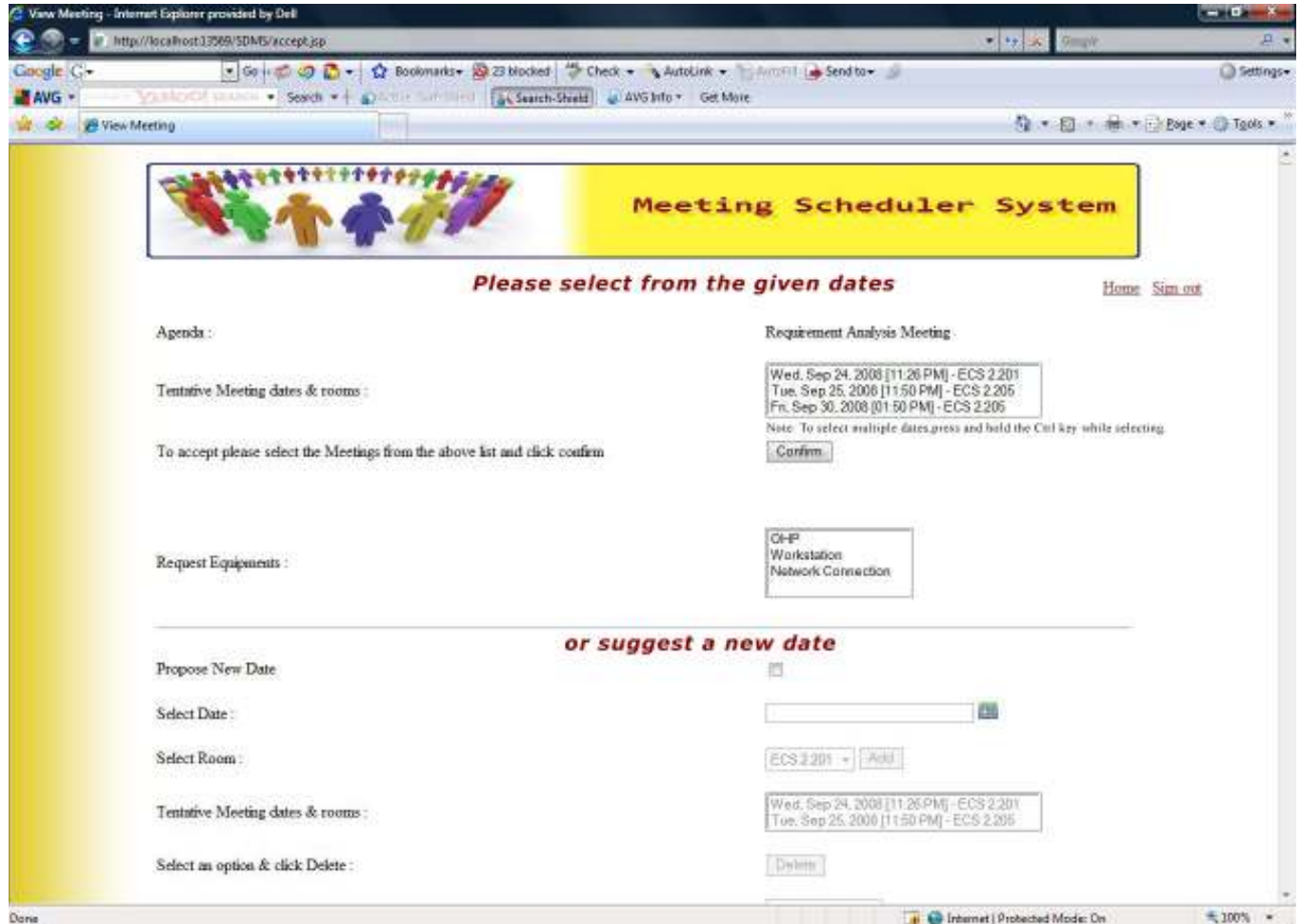
As the initiator types the participant's name character-by-character, a drop-down list of names beginning with those character appears.

## 5. Notification page




6. Active Participant – Viewing the Request sent by the initiator.

The participant will see the same screen without the “Request Equipments” listbox.



## 7. Old Request – the initiator can view the responses of the participants



**Meeting Scheduler System**

**Existing Meeting Requests** [Home](#) [Sign out](#)

**Search**

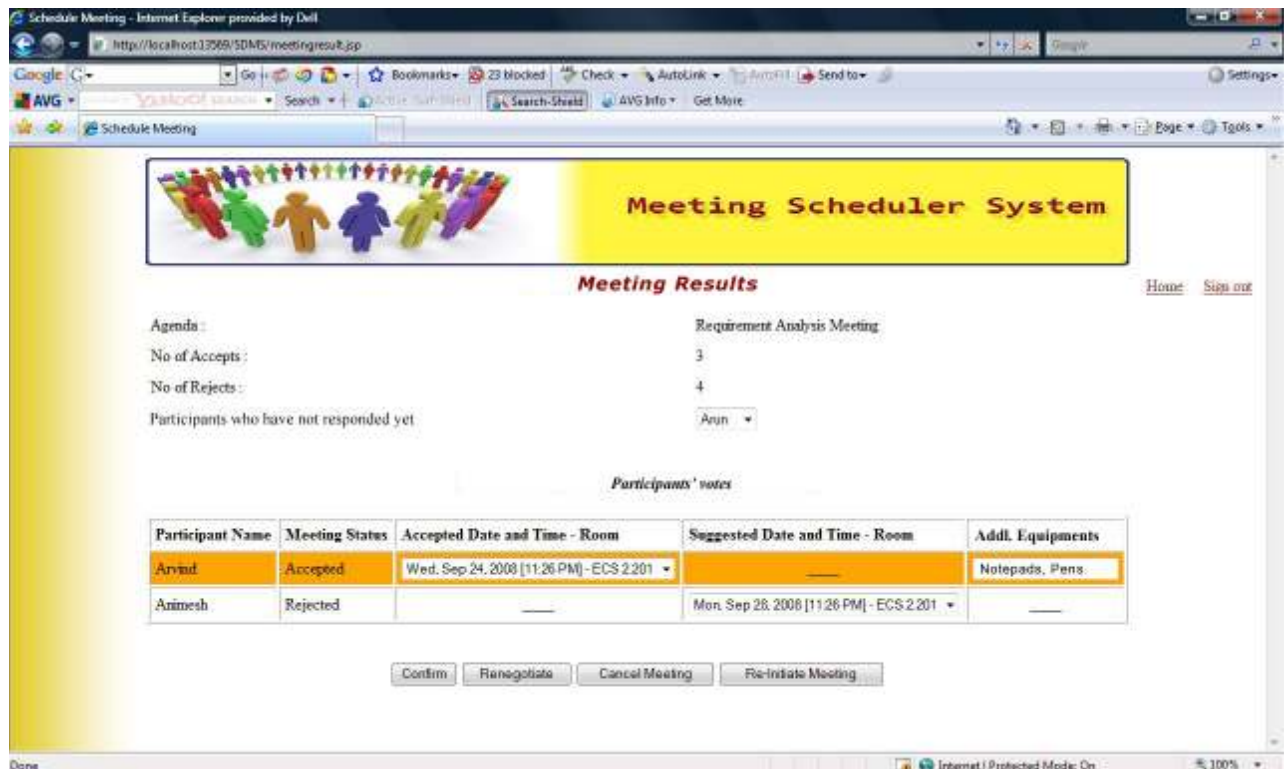
Meeting Id:  From:  To:

Select Room: ECS 2.201

**Search Result**

*Click on Meeting ID to view results*

Meeting Id	Agenda
<a href="#">1000</a>	Requirement Analysis Meeting
<a href="#">1003</a>	Test report Meeting
<a href="#">1009</a>	Client Meeting



**Meeting Scheduler System**

**Meeting Results** [Home](#) [Sign out](#)

Agenda: Requirement Analysis Meeting

No of Accepts: 3

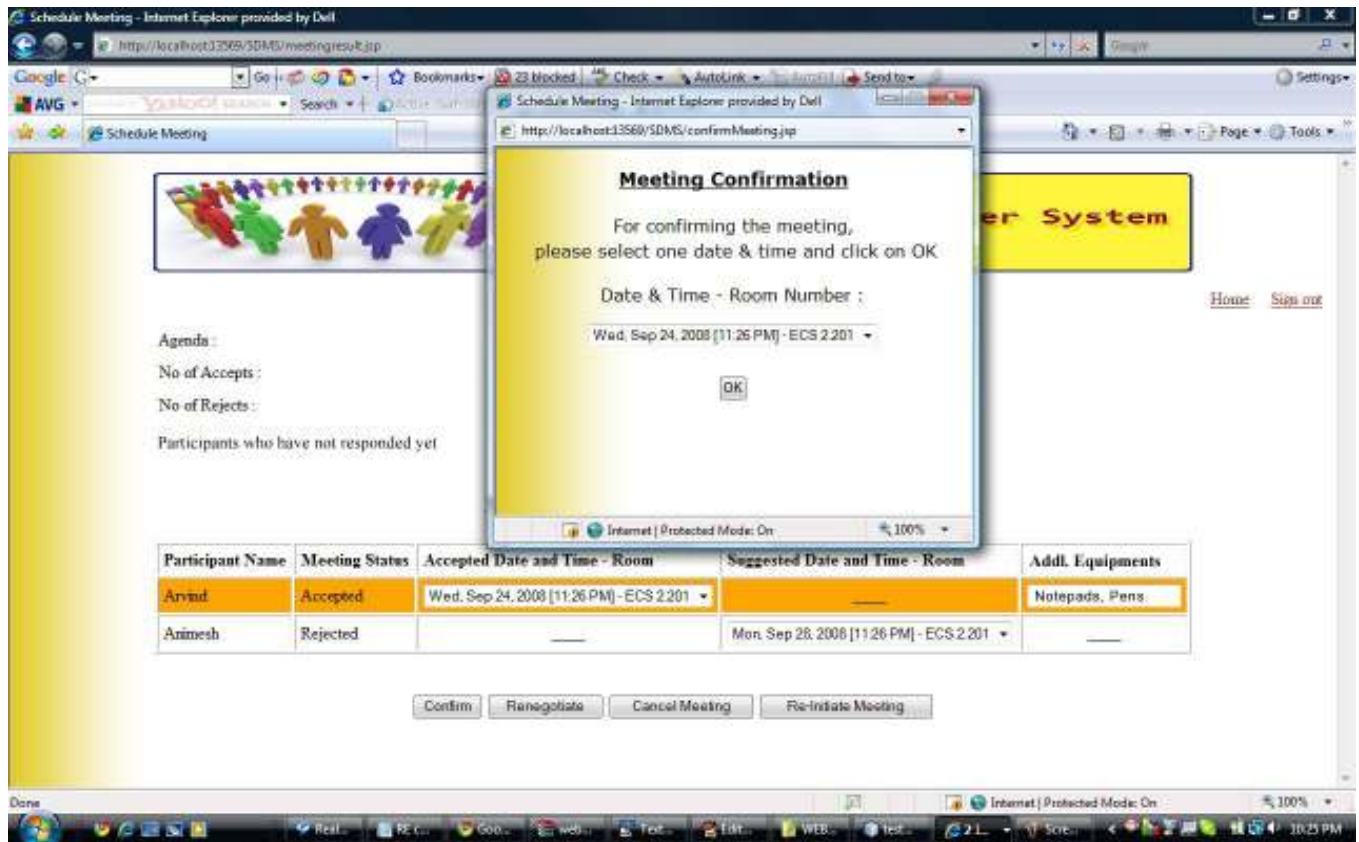
No of Rejects: 4

Participants who have not responded yet: Arun

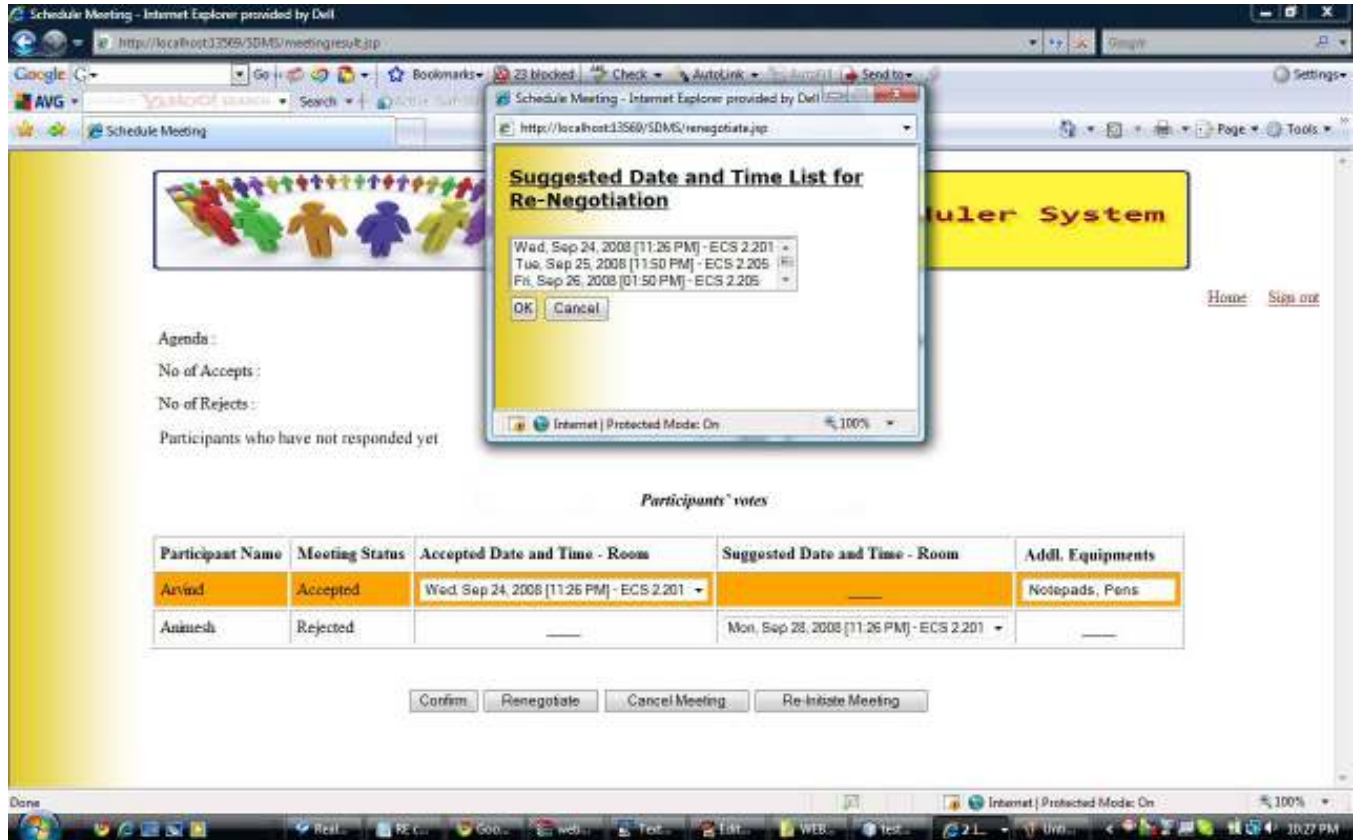
**Participants' notes**

Participant Name	Meeting Status	Accepted Date and Time - Room	Suggested Date and Time - Room	Addl. Equipments
Arvind	Accepted	Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201	---	Notebooks, Pens
Animesh	Rejected	---	Mon, Sep 28, 2008 [11:26 PM] - ECS 2.201	---

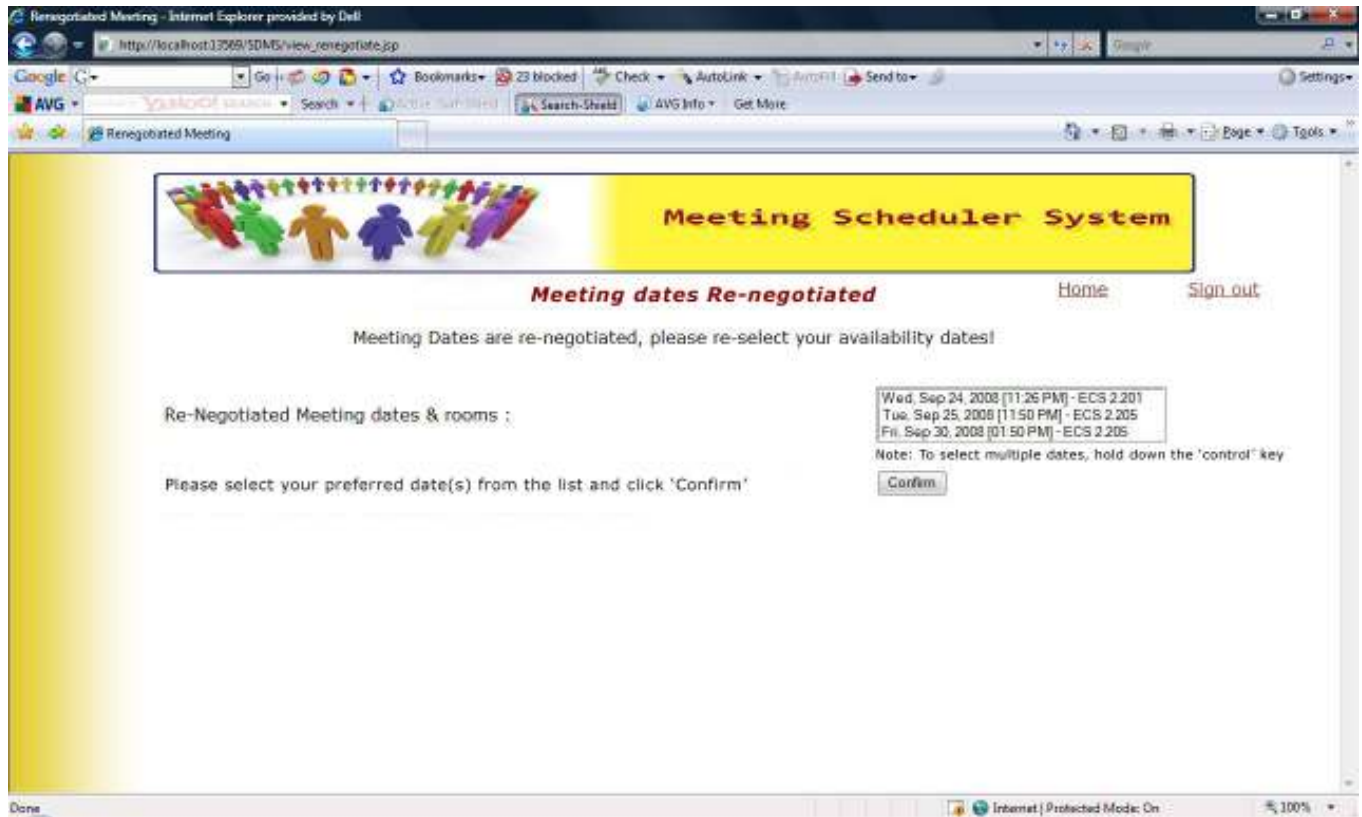
- Confirm meeting – the initiator can confirm the meeting by selecting a date-time, room combination



- Renegotiate a meeting: The initiator can renegotiate by selecting three date-time pairs

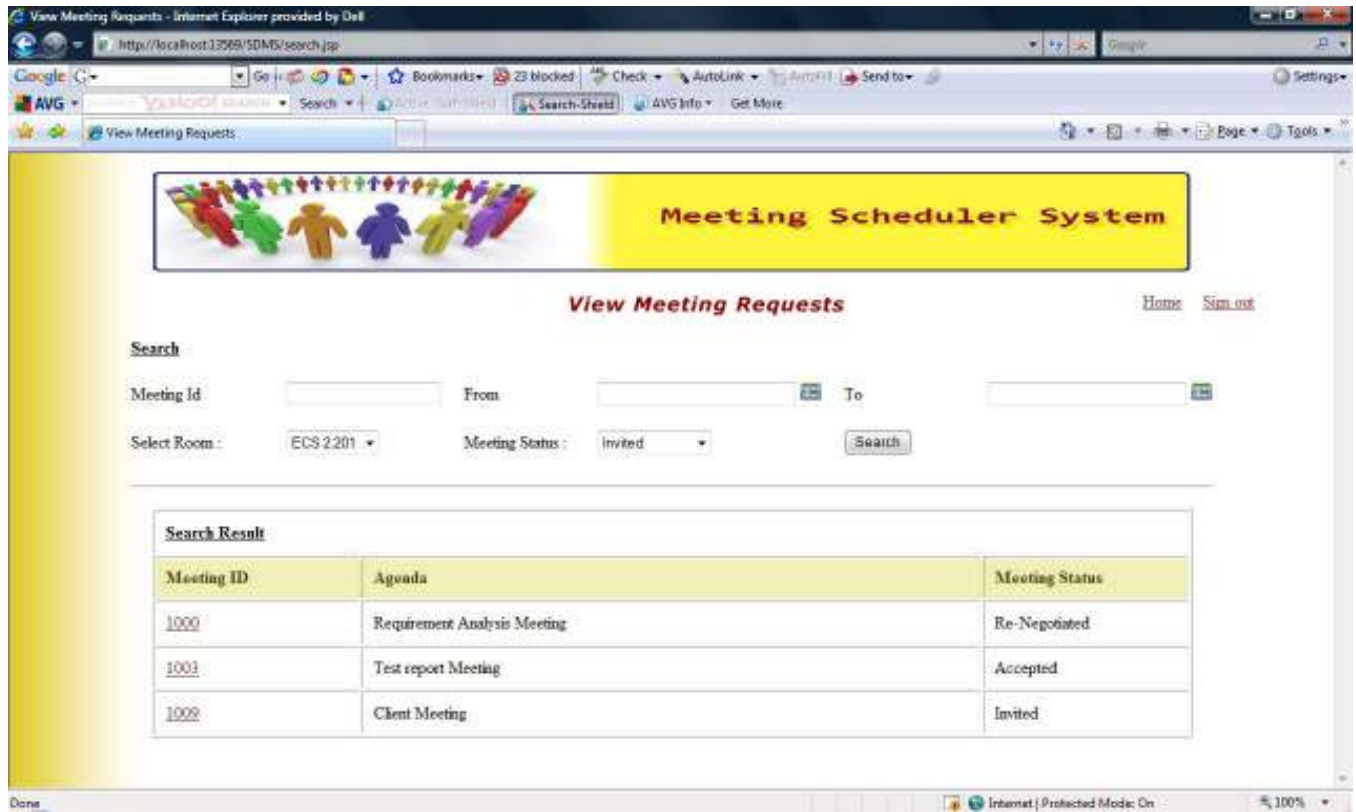


## 10. Participant – view/accept/reject the renegotiated request





## 11. Participant – View Meetings



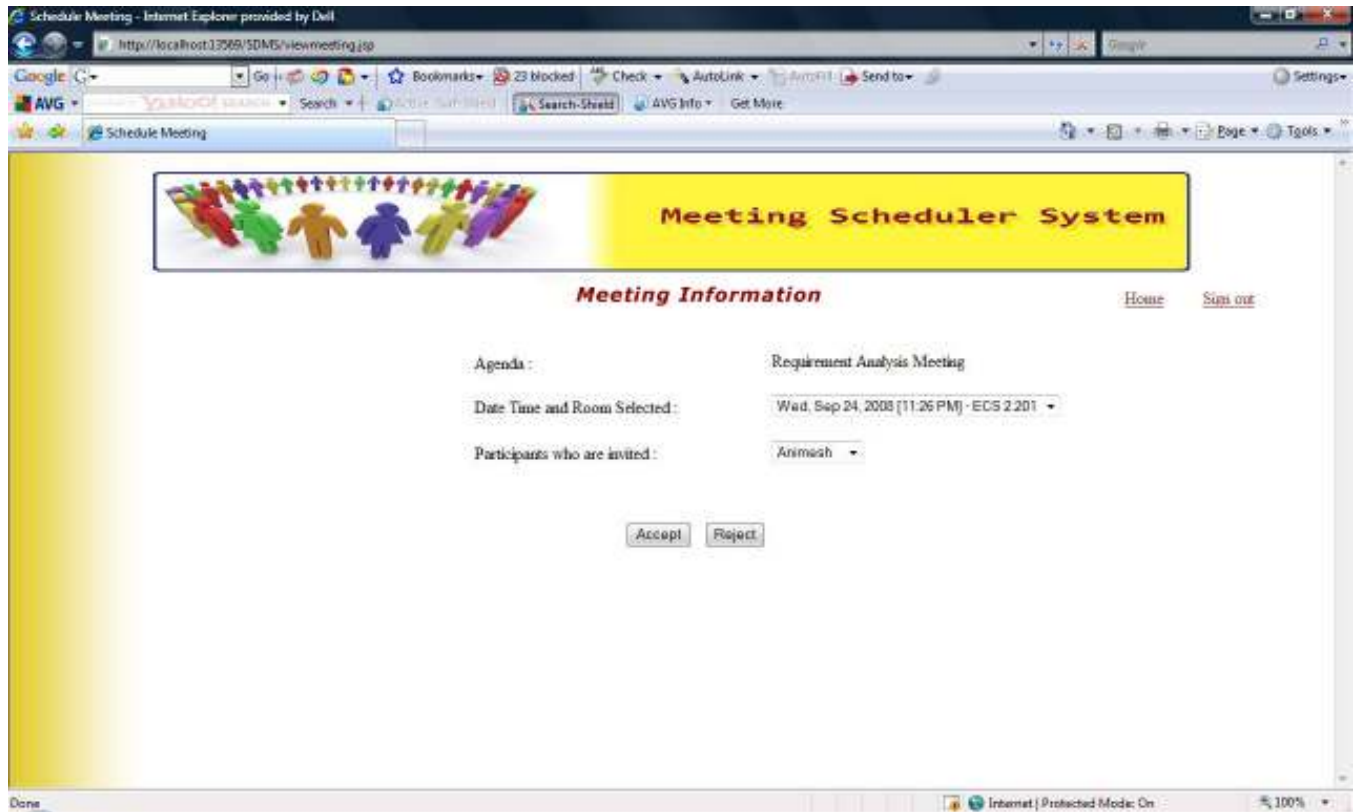
The screenshot shows a web browser window displaying the 'Meeting Scheduler System' interface. The page title is 'View Meeting Requests'. Below the header, there is a search section with the following fields and options:

- Meeting ID:** Input field
- From:** Input field with a calendar icon
- To:** Input field with a calendar icon
- Select Room:** Dropdown menu showing 'ECS 2201'
- Meeting Status:** Dropdown menu showing 'Invited'
- Search:** Button

Below the search section, there is a table titled 'Search Result' with the following data:

Meeting ID	Agenda	Meeting Status
<a href="#">1000</a>	Requirement Analysis Meeting	Re-Negotiated
<a href="#">1001</a>	Test report Meeting	Accepted
<a href="#">1002</a>	Client Meeting	Invited

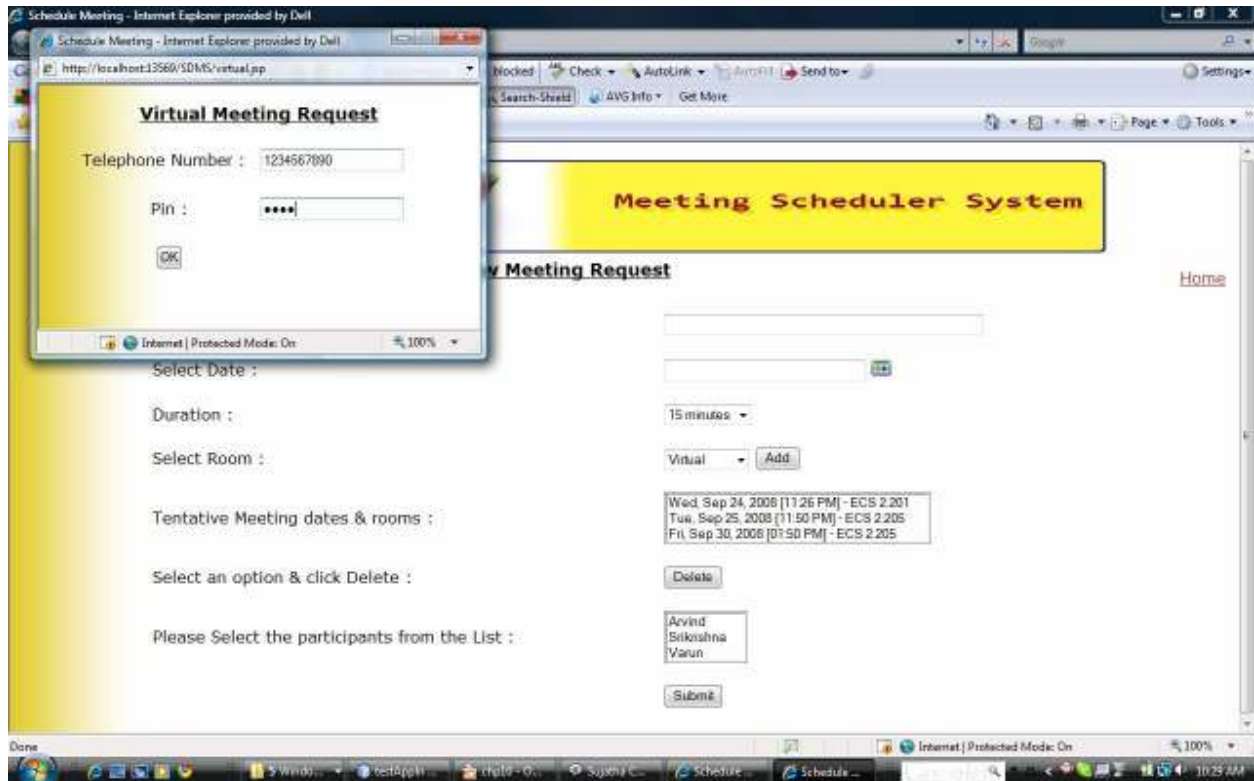
## 12. Participant – Change preference set



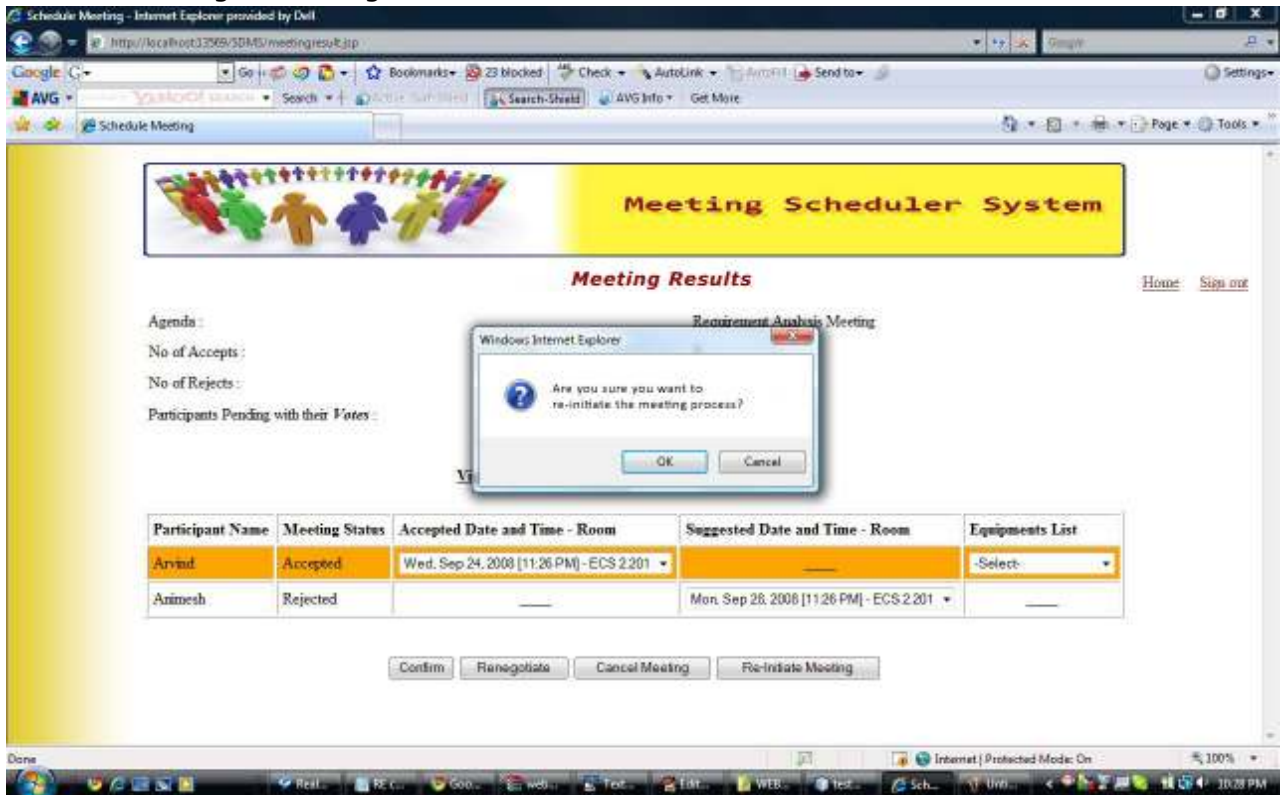
After Accepting the meeting request.



## 13.Virtual Meeting



## 14. Re-Initiating a meeting



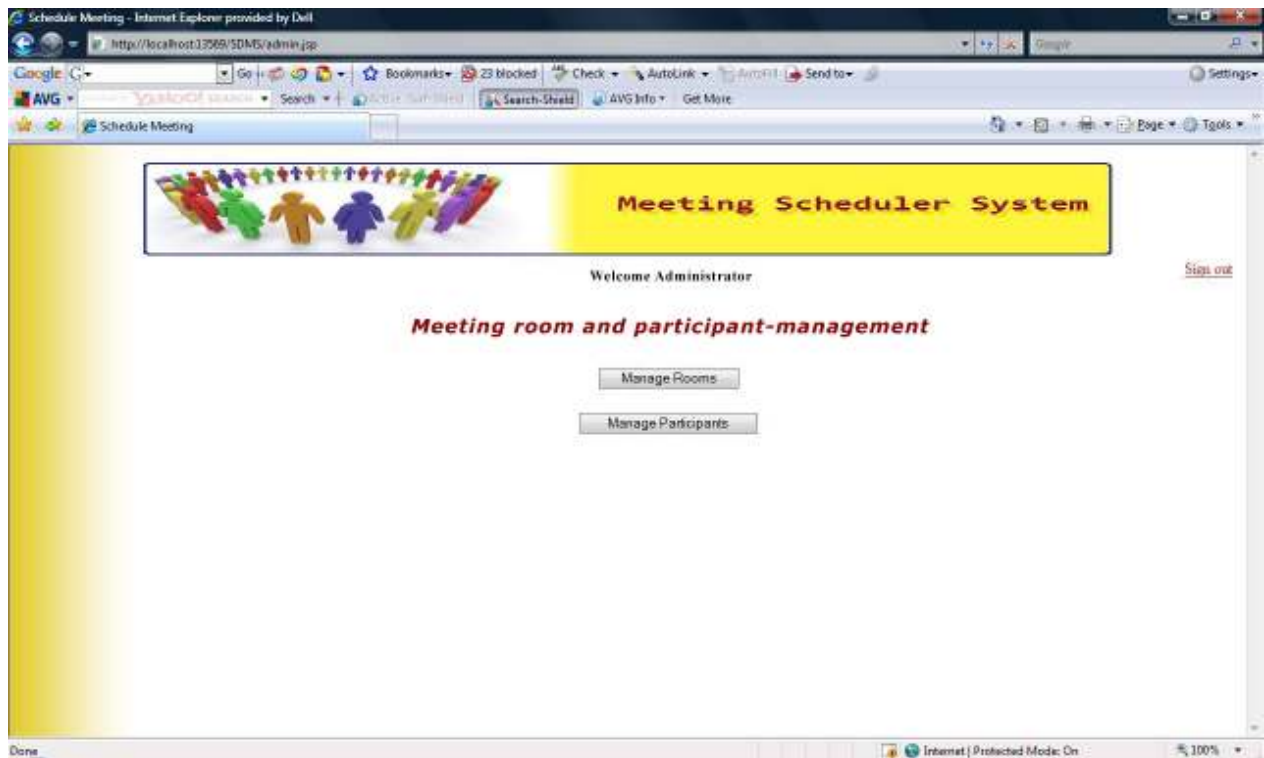
The screenshot shows a web browser window displaying the Meeting Scheduler System interface. A confirmation dialog box is overlaid on the page, asking: "Are you sure you want to re-initiate the meeting process?". The dialog has "OK" and "Cancel" buttons.

The background page shows the "Meeting Results" section for a "Requirement Analysis Meeting". It includes a table with the following data:

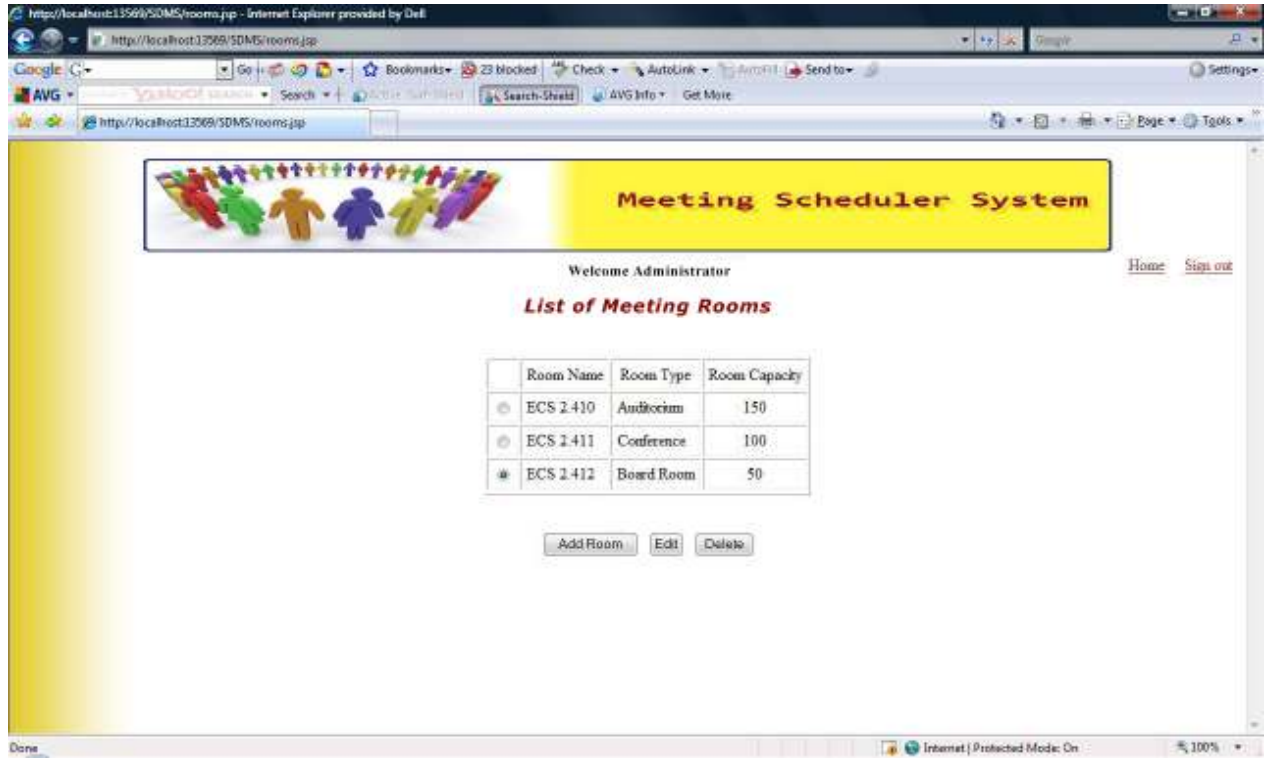
Participant Name	Meeting Status	Accepted Date and Time - Room	Suggested Date and Time - Room	Equipments List
Arvind	Accepted	Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201	---	-Select-
Animesh	Rejected	---	Mon, Sep 28, 2008 [11:26 PM] - ECS 2.201	---

Below the table are buttons for "Confirm", "Renegotiate", "Cancel Meeting", and "Re-Initiate Meeting".

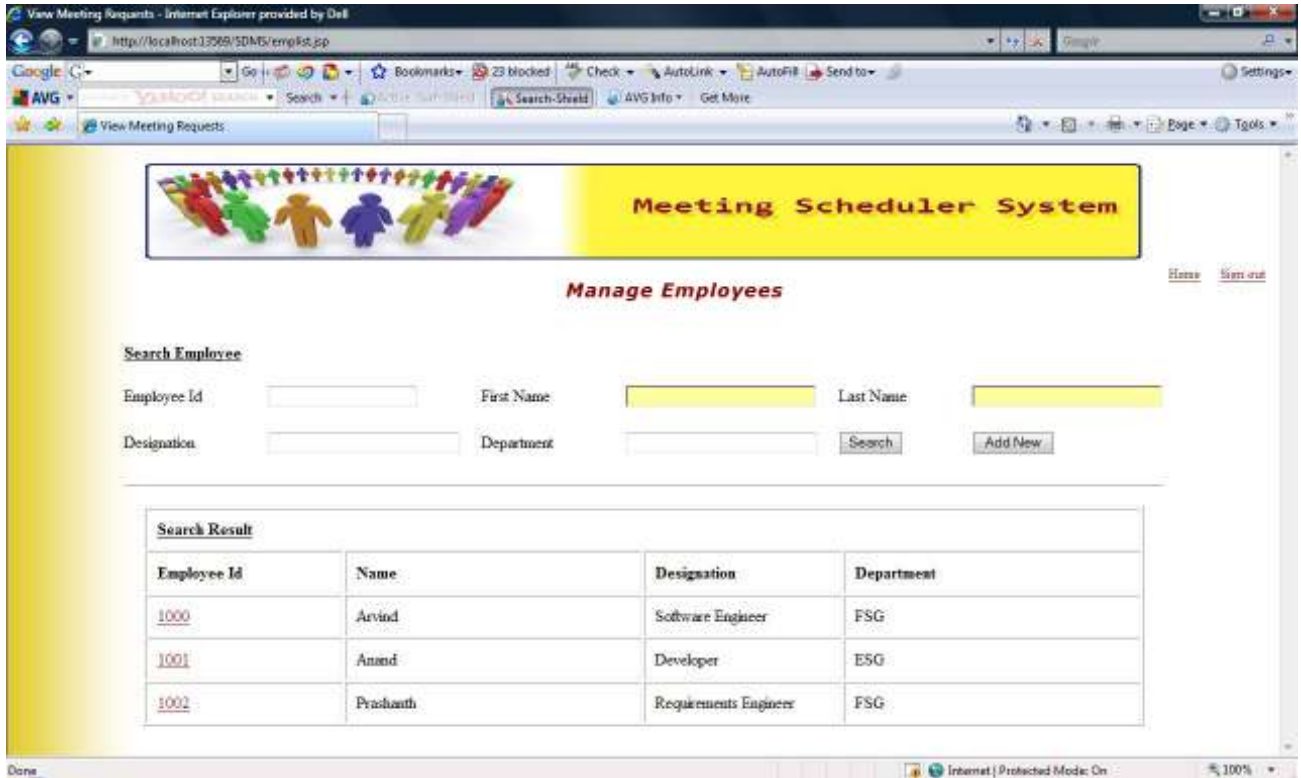
## 15.Admin Screen: Two of the administrator's functions



## 16. Administrator sees the list of available meeting rooms



## 17. Administrator Manages Employee details



The screenshot shows a web browser window displaying the 'Meeting Scheduler System' interface. The page title is 'View Meeting Requests - Internet Explorer provided by Dell'. The URL is 'http://localhost:3366/SDMS/emp/ist.jsp'. The page features a yellow header with the system name and a 'Manage Employees' section. Below this is a search form with fields for Employee Id, First Name, Last Name, Designation, and Department, along with 'Search' and 'Add New' buttons. A 'Search Result' table is displayed below the form, containing three rows of employee data.

Employee Id	Name	Designation	Department
<a href="#">1000</a>	Arvind	Software Engineer	FSG
<a href="#">1001</a>	Anand	Developer	ESG
<a href="#">1002</a>	Prashanth	Requirements Engineer	FSG