



Meeting Scheduler System

Interim Presentation – 1

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Meeting Scheduler System

Agenda

- Purpose and Scope
- Requirement Engineering Process
- User Role Analysis
- Functional Requirement Analysis
- Non-functional Requirement Analysis
- UI Designs
- Future Steps



Meeting Scheduler System

Purpose & Scope

- A web-based tool to facilitate meeting scheduling between localized and distributed participants according to pre-entered availabilities
- Minimize scheduling time and effort without compromising schedule notification
- Building a self-reliant, adaptable and user-friendly system with minimal dependencies



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Requirement Engineering Process

- Need for requirement engineering (Why?)
 - Initial requirement specifications were inconsistent, ambiguous and insufficient to develop a working system
 - Haphazardness - No traceability defined between requirements
 - Lack of user/stakeholder definitions
 - Naïve documentation – needed standardization
 - Lay-man definitions of requirements – to be transformed into software specific definitions



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Requirement Engineering Process

- Approach for requirement engineering (What?)
 - Elicit requirements without losing inherent meaning
 - Re-define ambiguous, inconsistent requirements
 - Add compatible but missing requirements/remove incompatible ones
 - Create traceability between improved requirements
 - Clarify user definitions and system specifications
 - Standardize all documentation
 - Create designer and developer specific models and UIs



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Requirement Engineering Process

- Work on requirement engineering (How?)
 - Iterative engineering process would be followed
 - Three rounds of analysis, each having customer (SynergySoft Inc.) review as the last step, before start of software design
 - Team division:
 - System Analysis: Varun Garg, Srikrishna Srinivasan
 - User Role Analysis: Arvind Raghavan, Kavan Shah
 - Requirement Elicitation: Varshada Buchake, Shivdas Nair
 - Traceability: Varshada Buchake, Shivdas Nair
 - Developer Interface: Varun Garg, Arvind Raghavan
 - Documentation: Kavan Shah, Animesh Roy



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Requirement Engineering Process

- Work on requirement engineering (How?)
 - User Role Analysis
 - Functional Requirement Analysis
 - Functional Requirement Traceability (Initial & Improved)
 - Non-functional Requirement Analysis
 - User Interface Design and mock-up
 - Naming conventions for all requirements
 - All documents created according to IEEE830 standards
 - Customer Review of all above steps for improvement in understanding



Meeting Scheduler System

User Role Analysis

- Sparse information in the initial requirement specification
- Analysis has defined following categories/roles for users :
 - **Initiator:**
 - Initiates and confirms meetings
 - Cannot access member metadata
 - **Participant:**
 - Members who receive meeting request from initiator
 - No access to member metadata except self metadata
 - **Administrator:**
 - Super-user (SynergySoft Inc. appointed)
 - Complete access to the system and member metadata
 - System override previlages



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Functional Requirement Analysis

- Issues with the initial FRs are divided into the following categories and are resolved accordingly
 - **Ambiguous Requirements** – having more than one interpretations
 - **Redundant Requirements** – two or more requirements leading to one interpretation
 - **Incomplete Requirements** – needs additional data for useful interpretation
 - **Unrealistic Requirements** – more ideal than practical



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Functional Requirement Analysis

- E.g. Ambiguous FR– Analysis and Solution
 - **Initial Requirement: EFR-15.5** - The system shall assist in monitoring meetings
 - **Analysis: 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
 - Monitoring changes in user schedules, exclusion sets, how they interact with scheduled meetings
 - 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.



Meeting Scheduler System

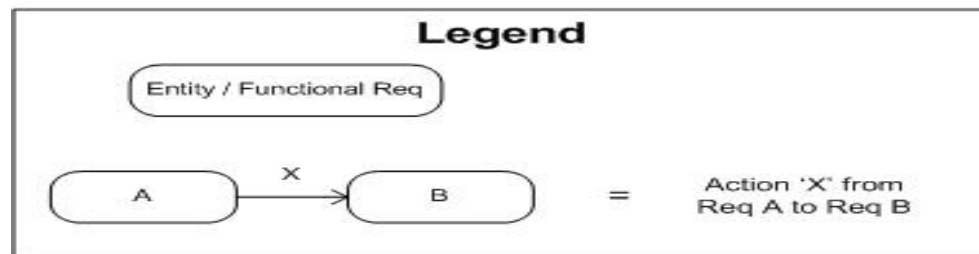
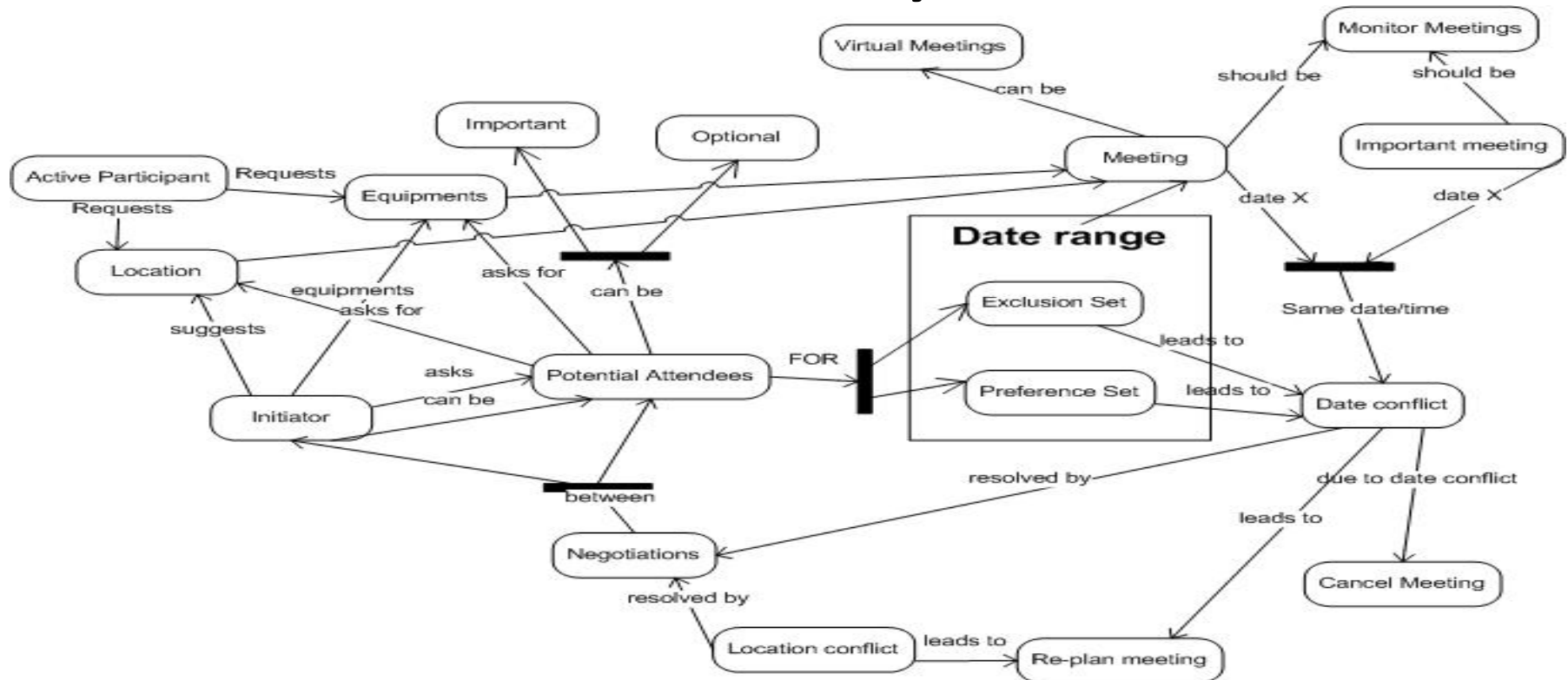
Functional Requirement Analysis

- A FR with improved understanding is generated from one or more initial FRs
- **Initial FRs:**
 - **EFR-12:** The meeting initiator can be one of the participants or some representative (e.g. a secretary)
 - **EFR-5:** The Initiator may also ask important participants to state preferences about the meeting location
 - **EFR-2:** A meeting date shall be defined by a (Date,Time) pair.
- **Improved FR:**
 - 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 system
 - A date-range, consisting of three 'date and time' pairs (**ref. EFR-2**)
 - A participant list
 - A room (one for each date) for the meeting to be conducted in. (**ref. EFR-5**)



Meeting Scheduler System

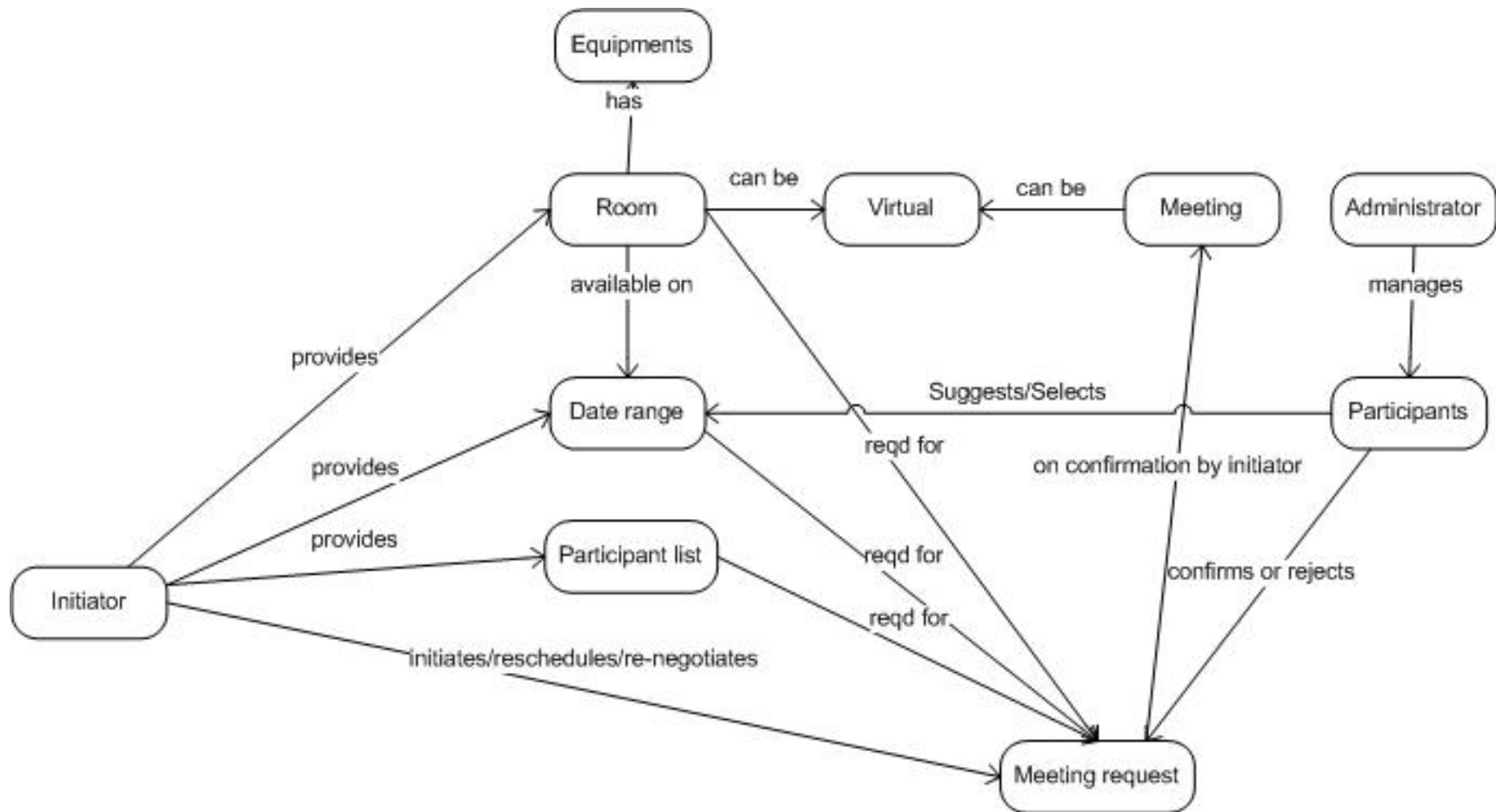
FR Traceability - Initial





Meeting Scheduler System

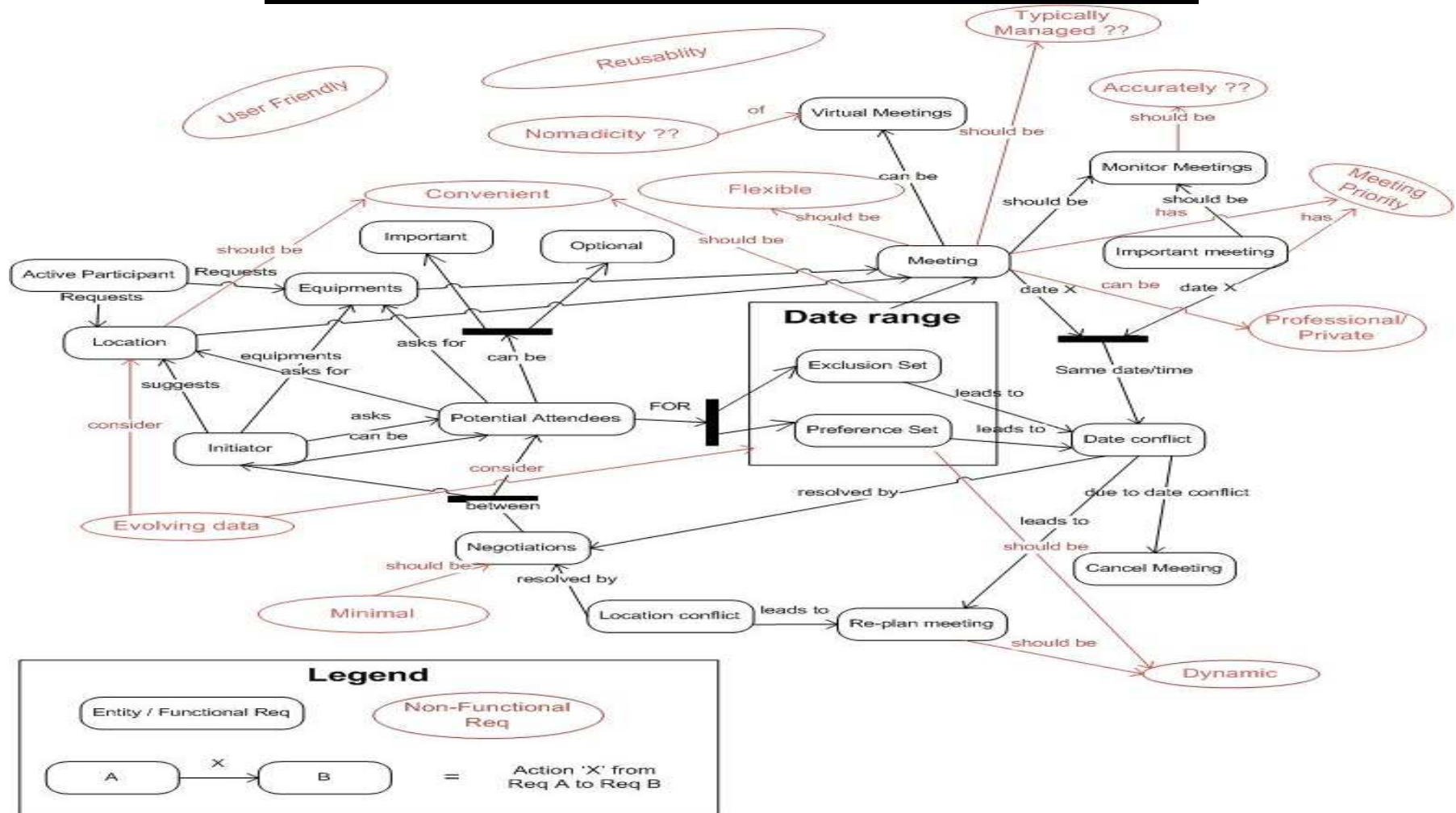
FR Traceability - Improved





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NFR Traceability - Initial





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Non-functional Requirement Analysis

- Issues with the non-functional requirement are also categorized under the four categories of **ambiguous**, **redundant**, **incomplete** and **unrealistic**.
- E.g. Incomplete NFR – Analysis and Solution
 - **Initial requirement - ENFR6:** The meeting date and location should be as convenient as possible, and available as early as possible, to all (potential) participants
 - **Analysis - ISI-5-ENFR-6:** 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.



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Non-functional Requirement Analysis

- **Solution:** Potential participant become Active participant when they accept the meeting request.
- E.g. Ambiguous NFR – Analysis and Solution
 - **Initial requirement: ENFR11** - The system should be customizable to professional as well as private meetings
 - **Analysis: ISA-3-ENFR-11** - The requirement states that “The system should be customizable to professional as well as private meetings”. The term “professional” and “private” are ambiguous.
 - **Solution:** The software system is not concerned with nature of the meeting whether formal/informal. Any authorized user can schedule a meeting using the software system.



Meeting Scheduler System

UI mock-ups – Login Page

Welcome to Synergy Distributed Meeting Scheduler - Internet Explorer provided by Dell

http://localhost:13569/SDMS/index1.htm

Google G

Go

Bookmarks

11 blocked

Check

AutoLink

AutoFill

Send to

Settings

AVG

Powered by YAHOO! SEARCH

Search

Active Surf-Shield

Search-Shield

AVG Info

Get More


Dell Start Page

Welcome to Synergy Di...

Home

Page

Tools



Meeting Scheduler System

Sign into your MSS Account

Employee ID

Password

[Forgot Password](#) [Sign Up for MSS](#)

Internet | Protected Mode: On

100%



Meeting Scheduler System

Home Page

Welcome to SDMS User !!! - Internet Explorer provided by Dell

http://localhost:13569/SDMS/Login

Google G

10 blocked Check AutoLink AutoFill Send to

AVG Search Search Active Surf-Shield Search-Shield AVG Info Get More

http://galaxy.utdallas.edu/ Welcome to SDMS User...



Meeting Scheduler System

Welcome, Arvind [Log Out](#)

September 2008						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
August 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 31	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 Test Meeting	29	30				October 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 31

Done Internet | Protected Mode: Off 100%



Meeting Scheduler System

Initiator options

Internet | Protected Mod 100%

Select Your Option:

New Request Old Request

Go

Internet | Protected Mode 100%

September 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
August 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 31	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 Test Meeting	29	30				October 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 31

Schedule Meeting View Meeting

Internet | Protected Mode: Off 100%

10:54 PM



Meeting Scheduler System

Schedule new meeting

Schedule Meeting - Internet Explorer provided by Dell
http://localhost:13569/SDMS/new_Request.jsp

Meeting Scheduler System

New Meeting Request

[Home](#)

Enter the Agenda :

Select Date :

Duration : 15 minutes

Select Room : ECS 2.201

Tentative Meeting dates & rooms :
Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201
Tue, Sep 25, 2008 [11:50 PM] - ECS 2.205
Fri, Sep 30, 2008 [01:50 PM] - ECS 2.205

Select an option & click Delete :

Please Select the participants from the List :
Arvind
Srikrishna
Varun

Internet | Protected Mode: On 100%



Meeting Scheduler System

Meeting request sent confirmation

The screenshot shows an Internet Explorer browser window with the following details:

- Tab: Schedule Meeting - Internet Explorer provided by Dell
- Address Bar: <http://localhost:13569/SDMS/confirmPage.jsp?btAgenda=Requirements&date2=Wed%2C+Sep+3%2C+2008+%5B11%3A06+PM%5D&roomList=ECS+2.201&optir>
- Search Bar: Google
- Navigation: Back, Forward, Stop, Refresh, Home, Stop, Refresh, Home, Stop, Refresh, Home, Stop, Refresh, Home
- Tools: 10 blocked, Check, AutoLink, AutoFill, Send to, Settings
- Address Bar: [http://galaxy.utdallas.edu/...](http://galaxy.utdallas.edu/) Schedule Meeting

The main content area of the browser displays a confirmation page with the following elements:

- A banner image at the top, identical to the one in the first image, showing a group of colorful 3D human figures in a circle, with the text "Meeting Scheduler System" to its right.
- Centered text: "Participants are Notified !!"
- A button labeled "Return to Home" below the text.

The status bar at the bottom of the browser window shows "Schedule Meeting - Internet Explorer provided by Dell" and "ted Mode: Off" with a zoom level of 100%.




Meeting Scheduler System

Participant meeting invite

View Meeting - Internet Explorer provided by Dell
http://localhost:13569/SDMS/accept.jsp

File Edit View Favorites Tools Help
Google G Go 11 blocked Check AutoLink AutoFill Send to Settings
AVG powered by YAHOO! SEARCH Search Active Surf-Shield Search-Shield AVG Info Get More
View Meeting



Meeting Scheduler System

New Meeting Invite [Home](#)

Agenda : Requirement Analysis Meeting

Tentative Meeting dates & rooms :
Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201
Tue, Sep 25, 2008 [11:50 PM] - ECS 2.205
Fri, Sep 30, 2008 [01:50 PM] - ECS 2.205

To accept please select the Meetings from the above list and click confirm

Note :Please Hold the Ctrl key to accept Multiple dates.

Propose New Date

Select Date :

Select Room : ECS 2.201

Tentative Meeting dates & rooms :
Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201
Tue, Sep 25, 2008 [11:50 PM] - ECS 2.205

Internet | Protected Mode: On 100%



Meeting Scheduler System

Participant new invite contd...

View Meeting - Internet Explorer provided by Dell
http://localhost:13569/SDMS/accept.jsp

Agenda : Requirement Analysis Meeting

Tentative Meeting dates & rooms :
Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201
Tue, Sep 25, 2008 [11:50 PM] - ECS 2.205
Fri, Sep 30, 2008 [01:50 PM] - ECS 2.205

To accept please select the Meetings from the above list and click confirm

Note :Please Hold the Ctrl key to accept Multiple dates.

Propose New Date

Select Date :

Select Room : ECS 2.201

Tentative Meeting dates & rooms :
Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201
Tue, Sep 25, 2008 [11:50 PM] - ECS 2.205

Select an option & click Delete :

Meeting Status :

Internet | Protected Mode: On 100%



Meeting Scheduler System

Initiator's previous meeting requests

Search Meeting - Internet Explorer provided by Dell
http://localhost:13569/SDMS/existinglist.jsp

Meeting Scheduler System

Existing Meeting Requests

Search

Meeting ID: From: To:

Select Room: ECS 2.201

Search Result

Click on Meeting ID to view results

Meeting ID	Agenda
1000	Requirement Analysis Meeting
1003	Test report Meeting
1009	Client Meeting

Done Internet | Protected Mode: On 100%



Meeting Scheduler System

Meeting details of old request

Schedule Meeting - Internet Explorer provided by Dell
http://localhost:13569/SDMS/meetingresult.jsp

Meeting Scheduler System

Meeting Results

[Home](#)

Agenda : Requirement Analysis Meeting

No of Accepts : 3

Participants who selected **Accept** : Arvind

No of Rejects : 4

Participants who selected **Reject** : Animesh

View of Participants and their availability for Meeting

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

Confirm Renegotiate Cancel

Done Internet | Protected Mode: On 100%



Meeting Scheduler System

Confirm meeting

Meeting Confirmation

For confirming the meeting, please select one date & time and click on OK

Date & Time - Room Number :
Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201

OK

Participants who selected **Reject** :

View of Participants and their availability for Meeting

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

Confirm Renegotiate Cancel



Meeting Scheduler System

Participant confirmation/rejection

Schedule Meeting - Internet Explorer provided by Dell
http://localhost:13569/SDMS/viewmeeting.jsp

Meeting Scheduler System

Meeting Info [Home](#)

Agenda : Requirement Analysis Meeting

Date Time and Room Selected : Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201

Participants who are invited : Animesh

Done Internet | Protected Mode: On 100%



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Initiator re-negotiation

The screenshot shows a web browser window titled "Schedule Meeting - Internet Explorer provided by Dell" with the URL "http://localhost:13569/SDMS/renegotiate.jsp". A dialog box titled "Suggested Date and Time List for Re-Negotiation" is open, displaying a list of dates and times with dropdown arrows:

- Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201
- Tue, Sep 25, 2008 [11:50 PM] - ECS 2.205
- Fri, Sep 26, 2008 [01:50 PM] - ECS 2.205

Buttons for "OK" and "Cancel" are visible at the bottom of the dialog. The background page shows the "Meeting Scheduler System" header and a "Meeting Results" section with the following details:

- Requirement Analysis Meeting
- 3
- Participants who selected **Accept** : Arvind
- No of Rejects : 4
- Participants who selected **Reject** : Animesh

Below this is a section titled "View of Participants and their availability for Meeting" containing a table:

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

At the bottom of the page are buttons for "Confirm", "Renegotiate", and "Cancel". The browser's taskbar at the bottom shows several open windows and the system clock at 10:55 PM.



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Participant's meeting status

View Meeting Requests - Internet Explorer provided by Dell

http://localhost:13569/SDMS/search.jsp

Google

Go

Bookmarks

11 blocked

Check

AutoLink

AutoFill

Send to

AVG

YAHOO! SEARCH

Search

Active Surf-Shield

Search-Shield

AVG Info

Get More

View Meeting Requests

Home

View Meeting Requests

Search

Meeting Id From To

Select Room : Meeting Status :

Search Result

Meeting ID	Agenda	Meeting Status
1000	Requirement Analysis Meeting	Re-Negotiated
1003	Test report Meeting	Accepted
1009	Client Meeting	Invited

Done

Internet | Protected Mode: On



Meeting Scheduler System

Participant's renegotiation

Renegotiated Meeting - Internet Explorer provided by Dell
http://localhost:13569/SDMS/view_renegotiate.jsp

Meeting Scheduler System

Meeting Dates re-negotiated

Meeting Dates are re-negotiated, please re-select your availability dates!

Re-Negotiated Meeting dates & rooms :

Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201
Tue, Sep 25, 2008 [11:50 PM] - ECS 2.205
Fri, Sep 30, 2008 [01:50 PM] - ECS 2.205

To accept please select the Meetings from the above list and click confirm

Note :Please Hold the Ctrl key to accept Multiple dates.

Confirm

Done

Renegotiated Meeting - Internet Explorer provided by Dell 100%



Meeting Scheduler System

Virtual meeting

Virtual Meeting Request

Telephone Number :

Pin :

Select Date :

Duration :

Select Room :

Tentative Meeting dates & rooms :

- Wed, Sep 24, 2008 [11:26 PM] - ECS 2.201
- Tue, Sep 25, 2008 [11:50 PM] - ECS 2.205
- Fri, Sep 30, 2008 [01:50 PM] - ECS 2.205

Select an option & click Delete :

Please Select the participants from the List :

- Arvind
- Srikrishna
- Varun



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Future Steps

Two more rounds of requirement engineering customer reviews would focus on improving the following:

- Formalizing NFR traceability
- More flexible bound on negotiation deadline
- Improvement on meeting monitoring
- Decreasing initiator dependence
- Incorporating meeting priorities in scheduling
- Considering participant importance in meeting scheduling
- Extending the concurrency bounds
- Enhance virtual meeting definitions
- Entertaining per-person resource requests



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References

- SDMS – Fall 06 project documents
- RE course material:
 - <http://www.utdallas.edu/~chung/RE/syllabus.htm>
- Microsoft Outlook's meeting scheduling system
- Image courtesy:
 - <http://eei.epfl.ch/>
- JavaScript calendar courtesy:
 - <http://www.zapatec.com/website/main/products/prod1/>
 - <http://www.scripts.com/viewscript/free-pikesys-event-calender/14028/>



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THANK YOU