All questions marked with ◆ are to be answered as preparation for the experiment. Please write the solutions into the designated fields as far as given and bring them to the practical.
1 Introduction

1.1 Asynchronous Groupware Systems

The beginning of the interdisciplinary research field CSCW leads back to the early 60s. Ellis gave one of the most frequently used definitions of CSCW:

“CSCW looks at how groups work and seeks to discover how technology (especially computers) can help them work.”

As CSCW describes the research fields, the term “groupware” identifies the systems (mainly software) that support distributed teams in their cooperative actions. In 1988 Johansen gave first definition of the term “groupware”:

“Groupware is a generic term for specialized computer aids that are designed for the use of collaborative work groups. Typically, these groups are small project-oriented teams that have important tasks and tight deadlines. Groupware can involve software, hardware, services and/or group process support.”

The notions of common task, shared environment, collaboration, communication or coordination are crucial for the groupware systems.

Another important concept in definition of groupware is awareness, which can increase communication opportunities in a distributed workspace. Dourish and Bellotti defined awareness as: understanding of the activities of others, which provides a context for your own activity. This context is used to ensure that individual contributions are relevant to the distributed group’s activity as a whole, and to evaluate individual actions with respect to group goals and progress.

Asynchronous groupware is used to help people to work in groups not at the same time. The support of the group work specially refers to access administration of common resources. Besides this asynchronous groupware systems also contain a communication component: like e-mail systems, newsgroup, bulletin boards, etc.
1.2 BSCW: Basic Support for Cooperative Work

In recent years shared workspace systems have become a widespread tool for the support of flexible and weakly structured cooperation in teams and communities. Typical examples for such systems are BSCW, Hyperwave, Livelink, Groove, or MS-Sharepoint. Application areas for these systems are manifold such as the coordination of lectures, intra- and inter-organizational projects, or communities.

A shared workspace normally contains different types of information such as documents, pictures, URL collections, threaded discussions, or member profiles. The content of each workspace is represented as information objects arranged in a folder hierarchy. Email notification or activity icons embedded in the user interface of the system provide awareness about the activities of the workspace members.

Since shared workspace systems do not impose a fixed structure on the workspace organization, each workspace can be organized according to the needs and requirements of the cooperating team. Most preferred structures for workspace organization are project structures (work packages, meetings) or organizational structures (departments, projects). Often structures that reflect both criteria are applied. However, the aim and intention of these structures is often not immediately visible to the users who share a workspace. Although workspace or folder descriptions can be used to describe the purpose of each workspace, users are often confused about the hierarchy, resulting in the effect that they have problems in finding the adequate folder to which they can upload a new document or where they can find the appropriate information. Although the users cooperate through a shared workspace, they often fail to develop a common understanding or common conventions. They do not share a common understanding of the workspace. Instead, they have multiple views and perspectives.

This is in particular true for newcomers who have not been involved in the past creation and use of a workspace. A clear indication for this is the often observed behavior: Users first browse and explore several folders or documents before they actually upload a new document. Nevertheless it happens in particular in large workspaces, that users store their documents based on their personal understanding which does not correspond to the overall group policies. Another effect is that users often create new folders within a workspace for their documents, since they cannot find the right place in the existing hierarchy. Obviously, this leads to a disorganization and fragmentation of the workspaces, which makes it difficult and time consuming for other users to find information or to reorganize the workspace.
BSCW (Basic Support for Cooperative Work) system is a Shared Workspace system developed at Fraunhofer FIT, that is used by more than 1 million users world-wide. BSCW is a web based groupware system providing features for document upload, version management, member and group administration, and awareness about the activities in workspace. A key feature of BSCW is the support of self-organization, i.e. it does not enforce a certain use pattern, policy or procedure. Although this is highly appreciated by its users, it can also lead to the effect of disorganized and fragmented workspaces, if cooperating teams use the system not disciplined enough.
1.3 BSCW: First Steps

**Gaining access to BSCW**

BSCW is a privacy protected shared workspace. All users of a workspace must be invited via e-mail by the instructor in order to use the area. Class collaboration is facilitated through uploading of documents, web site links, and asynchronous discussions into the workspace. Your instructor will structure each workspace to conform to the needs of the class. Best of all, BSCW does not require a lot of computer knowledge.

The shared workspace is accessed through the UDE web site (http://bscw.uni-due.de). You can log into BSCW with your UDE-Identification.
After you access BSCW, you will see a screen similar to the illustration above. You will see your sign-in name and folders for each class in which you were invited.

Each workspace will have folders, sub-folders, documents, and web site links set up by the working users. No two workspace areas will necessarily look the same.

To view the contents of your class workspace, double click on the folder or underlined title of the folder. The folders in the workspace interact with you in the same manner as all folders on your computer. Once the “home” folder of the course is opened, you will see the sub-folders, links, and documents uploaded by your instructor.

**Uploading files to the class folder**

1. Double click on the sub-folder in which you intend to add a file.
2. Once the folder is open, you will see at the top an action bar.

   ![Action Bar](image)

3. To add a file, click on 🗂️. A dialog box will pop-up to aid in the upload of a file.
4. You must enter the pathway to the file you wish to upload from your computer.
5. Next, you can set the MIME (multipurpose internet mail extensions) type. There is a dropdown arrow to a selection menu for various MIME types. MS Word, Excel, and PowerPoint are among the types available.
6. You may change the name of the file, if you desire.
7. Click on “OK” to finish uploading the document.

BSCW also identifies the day time of the upload and the user that made the upload.

Besides uploading files, there are many functions in BSCW, which you should try to experience (see action bar). Other functions can be reviewed in the helping manual of BSCW.

→ [http://www.bscw.de/documentation.html](http://www.bscw.de/documentation.html)
2 Fulfilling the Scenario

*From Lab 1:* “You are part of a working group at a software company, which was chosen to participate in a developing process to create a groupware to support the work of globally operating teams. The team, in which you are participating, should do the first steps that make a later development of this software possible.

In order to accomplish this, your team should
- Inform themselves and gain knowledge about the basic concepts of groupware and the field of CSCW
- Analyze different kinds of groupware with respect to the modes of operation, the potentials and the supporting group process abilities
- Analyze the functions of different kinds of groupware and possible enhancements
- Produce a recommendation for the later software development
- Develop new ideas and aspects, which could support global collaboration and processes, or enhance these by use of new perspectives.”

Now you should think about your team and company itself. As you have learned, there must be a user-oriented approach to select or develop groupware for a certain goal. Now the opportunity is given to you to select your own company and do your final presentation with respect to this company. Your recommendations and proposals should be fit into your company structure.

During this last lab, you’ll have the opportunity to determine your company, its structure, workflows, human resources, team size and global time shift benefits. Eventually you should be able to achieve the final goal within a selection of groupware tools and your own groupware ideas for your software to support the software development lifecycle inside your software company.

During this experiment you should
- Research BSCW
- Make the necessary decisions about your company structure.
- Make the necessary adjustments for the team scheduling.
- Prepare PowerPoint for the final presentation
3 Preparation
Please prepare the following questions as preparation for your experiment. Write down the notes in the fields given below the questions if not announced different in the task.

3.1 Asynchronous Groupware BSCW
Try to solve the following questions by checking out the functions of BSCW.

♦ 3.1.1 Login at BSCW with your UDE-ID and become acquainted with the BSCW Graphical User Interface. Use the manual to become familiar with the functions of BSCW.

  ➔ Login: http://bscw.uni-due.de

♦ 3.1.2 What is awareness? How is group awareness implemented in BSCW?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

♦ 3.1.3 What is the function of the versioning feature and how can it be used?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
3.1.4 What is the function of the BSCW Calendar? Which component is affected by the Calendar?

3.1.5 What possibilities exist to communicate with other users?

3.1.6 Set up a workspace with subareas and give it a reasonable structure for the common preparation of your final common report, the final presentation and for considerations about your company structure. (folders, documents, discussion-forums, project plan, etc.)

3.1.7 Invite your group members to your workspace. Try to adjust the workspace with a reasonable structure in cooperation with your group mates.

3.1.8 Use the BSCW Calendar to plan and organize a new meeting concerning your report and the presentation. Based on the feedback from your other group-mates, change the settings of this meeting (add/delete members, change date/location, tools, etc).

Bring all your material (reports) on USB or CD to this experiment!
4 Hands-On

In this hands-on part of the experiment, you shall research asynchronous groupware systems. In order to experience the BSCW software, where besides discovering the functionality of the system, you also have to recognize how the main characteristics of groupware systems (e.g. awareness, communication, cooperation, coordination, etc) were implemented. In Shared Information Spaces the workflow implementation plays a major role, on which you should keep a special focus with respect to your team and company usage.

4.1 The planning process

4.1.1 Agree on a group structure (coordinator, group process observer)

4.1.2 Agree on a protocol for the preparation of your presentation and the final report. Describe this protocol, give at least a description about

a. How to handle possible access conflicts throughout the time until your presentation.

b. How to communicate throughout the time until your presentation.
c. How to come to an agreement on the final version of your presentation.

4.1.3 Make a final decision about the common workspace structure in BSCW.

4.1.4 Develop a “project plan” for the development of your presentation. What are the milestones? Put it in a BSCW-projectplan for your presentation.

4.1.5 With regard to 4.1.1 to 4.1.4 describe how BSCW can support you throughout the time until your presentation.
4.2 Company Structure

4.2.1 In your common workspace, write down your ideas for your company structure. Coordinate with your group mates which tools you could need. Topics to be discussed should be

- the company’s name,
- its structure,
- workflows,
- human resources,
- team size
- global time shift coordination
- considerations about the operational areas of your groupware (software development lifecycle)
- etc...

4.2.2 Prepare a list of all static and dynamic group process parameters with respect to your company teams.
4.3 Final report and final presentation

4.3.1 Create a document file (CSCW-Report_GrNumber.doc) and upload it to your common workspace.

4.3.2 Create a PowerPoint file (CSCW-FinalPres_GrNumber.ppt) and upload it to your common workspace.

4.3.3 Start the version system for both files you’ve just created. In the report, put inside your common created parts of the report. How is the versioning feature being used, if you want to merge your reports via BSCW later on?

4.3.4 Experience whether people can communicate with members of other groups about your results from CSCW-Report_GrNumber.doc. If yes, how?

4.3.5 In your common workspace, write down your ideas for the final presentation. Coordinate with your group mates which tools you could need. Topics to be discussed should be amongst others:

- Structure of your company
- Results of your Report
- Recommendation of the proposed groupware
4.3.6 In your common workspace, write down your ideas for your proposed groupware. Coordinate with your group mates which tools you could need.

Note: the final paper and presentation (normally) is done after this experiment.

4.4 Theoretical Work

4.4.1 Give a short summary about awareness and its possible contribution to your groupware concept for your company.
4.4.2 Give an overview about groupware concepts you find helpful to integrate into your groupware concept for your company.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

4.4.3 Give a short summary about the implementation of concurrency control within the tools and environment of BSCW.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

4.4.4 Give an overview about the “overnight gain effect” and compare this with the tools you experienced in this lab so far. How can these tools contribute to the “overnight gain effect”?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
4.4.5 What are the coordination, the cooperation and the communication components in BSCW?


4.4.6 Where in the 3C-Model by Teufel et al could you insert BSCW? Why? Sketch it!
5 After the Lab

5.1 Report about BSCW
After the accomplishment of Experiment 5, in order to present your results and experiences about BSCW to your company, the report of your insights should be complemented. Add the results from this lab (you may use all results from this lab) in a new subchapter. (min. 500 words)

5.2 Final report
Finish the common report merged with all the material which has been created throughout the whole lab. Also write down a final statement. This report should be given to the tutors at presentation day.

5.3 Final presentation
Create the presentation. Presentation time is limited to 20 minutes. Every group member should be able to hold the presentation.