Client System

Before launch, a conference is selected. Only conferences that are not PRE-PLANNING or OVER can be selected. The look of the client system adapts to the conference.

Authentication
Authentication is used to identify users and limit access.

- Login by email and password
- New users can register
- Email must be unique - if known email is entered during registration the login dialog and a link to recover the password are shown
- Password stored securely (SHA1 with random salt, generated upon each change)
- Login can be stored securely in cookie (token is generated and changed each time the cookie is verified)
- Users can recover a lost password: system generates new password and sends it to the stored email address

To register as a new user, the student must guarantee that he/she is a student and 18 years or older.

News
News shows all messages from the administrators, filtered for the appropriate enrollment status.

Profile
Every user has a profile which he/she can manage. The profile contains the following fields:

- Email Address (must be valid)
- Password (at least 8 characters)
- First name (required)
- Last name (required)
- Gender (m/f - required)
- Home country (required)
- Spoken languages (optional)
- Country of residence (optional)
- City of residence (optional)
- University (required)
- Department (optional)
- T-Shirt size (S,M,L,XL,XXL,XXXL + m/f - not dependent on gender, required)

Conference Status
The conference status is always displayed and explained. It can be:

- PLANNING: the conference is invisible to students (only open for administrative purposes)
- ENROLLMENT: students can enroll in the conference
- REGISTRATION: the lottery was run and we are waiting for student registrations
- BIDDING: the tasks are prepared and can be bid for
- RUNNING: the conference is running
- OVER: the conference is over

Enrollment

Enrollment handles the status of the user for the conference. There are 6 states:

- UNENROLLED: the user is not enrolled
- ENROLLED: the user is enrolled
- WAITLISTED: the user is on the waitlist (not accepted)
- ACCEPTED: the user is accepted to the conference
- REGISTERED: the user has registered for the conference (this requires a separate step by the user and must be tracked manually)
- ON-SITE: the user is on site and ready to take jobs
- DROPPED: the user was dropped from the conference

The state must always be displayed. The user has limited control over these states:

- can enroll when UNENROLLED and conference is in ENROLLMENT or REGISTRATION - move to ENROLLED and assign lottery number if lottery was run
- can unenroll when ENROLLED, WAITLISTED, or ACCEPTED - move to UNENROLLED

Wait list

When the lottery is run, all students are assigned a lottery number. The lottery number determines the spot in the wait list. The first n slots are accepted to the conference (n depends on the conference). If an accepted students is dropped, the next student from the wait list is moved to accepted.

The wait list is displayed when conference is in REGISTRATION or BIDDING. It is displayed as a single list with the following information about each student:

- Wait list number (number of people before this person + 1)
- First name
- Last name
- University

The accepted and registered students are listed above the wait list with the same information, except for the wait list number. Both lists are ordered by the original lottery number (which is not displayed). Students without a lottery number are displayed first.

Bidding

The bidding system allows the user to place bids on tasks he/she wants to work on during the conference. Shortly before a conference day, the bid auction is run for the day, assigning task slots to bidders by creating assignments. This is done semi-randomly in the order of task priority and bid preference.

Bidding is only accessible to users marked as REGISTERED and the conference is in BIDDING or RUNNING. Tasks are listed by conference day with the following details:

- Start time (default order)
- End time
- Name
- Description (as hover text)
- Hours
- Slots available

Bids have a status, which is clearly indicated:

- OPEN: waiting for the auction
- ASSIGNED: won the bid
- CONFLICT: there was a time conflict (another bid was won during the same time)
- FULL: the bid was lost because the task was full

Bidding options are only shown, if the task is in the future, there is no bid from the user and there are slots available for the task, or the bid is marked as OPEN. Bids have a preference from 1 to 3 with 1 the highest. Bidding is done for each task with a 1-click interface:

- The active bid is indicated by color
- There can never be two bids on a task by the same user
- The user can, however, bid on overlapping tasks - conflict management is handled by the assignment system
- The bid can be changed by clicking an icon in the bid color
- The bid can be removed by clicking another icon

In addition, the user can bid on all tasks of the day with a single click. This creates new bids for all tasks with preference 3 that do not have a bid assigned to them already (does not overwrite higher-priority bids). Placing high preference bids is limited (numbers due to change):

- max 3 bids per day for preference 1
- max 10 bids per day for preference 2
- max 10 bids per conference for preference 1

If the task is assigned to the user, the bid options are replaced by a status indication for the assignment (ASSIGNED, CHECKED-IN, or DONE).

Assignments

When the conference is in RUNNING, assignments lists all assigned jobs in a single list, grouped by conference day. For each job the following is shown:

- Start time (default order)
- End time
- Task name
- Task description (as hover text)
- Hours
- Completion status (ASSIGNED, CHECKED-IN, or DONE)

Here, the student can also see his/her total number of completed and assigned hours.

Admin System

The admin system provides management capabilities to the event organizers.

Authentication

Authentication is used to limit access. There are three groups:

- Moderator: can manage assignments and see student status
- Administrator: in addition can manage tasks, enrollment, and conference details and run lottery and bid auction
- Super Administrator: in addition can create conferences and admin users

Login is required before using the system. There is no password recovery service and no additional information is stored with the admin users. They can, however, change their password.

Conference Details

The conference details are:

- Conference name
- Year
- Complete name (shortcut)
- Start date
- End date
- Number of student volunteers we need
- Status (PLANNING, ENROLLMENT, REGISTRATION, BIDDING, RUNNING, OVER)

In addition, all default message texts can be defined here and all custom messages are displayed with a link to send a new message.

Enrollment

Enrollment lists and allows management of the enrolled students by status. The following fields are shown:

- First name
- Last name
- University and department (one field)
- City of residence
- Country of residence (short notation)
- Spoken languages (short notation)
- Lottery number

Each student can be moved to a different status with a one-click interface:

- The enrollment status is changed by clicking on an icon/text representing the target status. The active status is not visible.
- After moving the student, the change is clearly indicated but the entry is not removed
- An optional comment field can be filled out at any time to give reason for a change

In addition, the full profile of each student can be accessed and changed by clicking his/her name. In this form there are several other options:

- Student can be unenrolled
- Student can be blocked (cannot login any more)

- Enrollment history is shown
- Password can be reset - this has the same effect as the student requesting a new password

Administrators can also create new students and enroll them in the conference or find students by email to enroll.

Lottery

The administrator runs the lottery to determine the position in the wait list for all students. Students from the top of the list are automatically moved to the ACCEPTED state. When accepted students drop out of the conference, the lottery is run again to move new students to ACCEPTED.

- A random lottery number is assigned to all students marked as ENROLLED
- Old lottery numbers remain unchanged, new numbers must be higher then the largest existing number
- Students that are WAITLISTED while the lottery is run are assigned lottery numbers for the wait list
- Students that are ACCEPTED or REGISTERED are not assigned lottery numbers.
- After running the lottery, the ACCEPTED list is filled with the first students from the wait list until the number of SVs from conference details is filled.

After running the lottery a reminder to send out emails is given with a link to the appropriate messaging section.

Tasks

Tasks are jobs that need to be done during the conference. They award hours to the students who finish them. Students must gather a certain number of hours during the conference. Assignments are done through the bidding system or manually, when the task begins. Tasks are shown by conference day and can be created, changed, and removed. Each task has the following fields:

- Name
- Description
- Priority (high, normal)
- Conference day
- Start time
- End time
- Award hours (can differ from the actual hours)
- Slots

Tasks can be saved as a copy allowing quick definition of multiple, similar tasks. Further, all tasks of a conference day can be cloned to another day. Finally, all tasks from a previous conference can be copied to this conference.

Bid Auction

The bid auction is run shortly before every conference day to assign tasks to bidders For each accepted bid an assignment is created. The algorithm is as follows:

1. Start with required preference = 1
2. A bid with the required preference is selected semi-randomly (students with few hours get preference)
3. If no bids are found...

      3.1.   Stop if required preference = 3 (max)
      3.2.   Raise required preference
      3.3.   Goto 2
4. If there are no task slots available...
      4.1.   Mark bid as FULL
      4.2.   Select new random bid with required preference from the selected student
      4.3.   If no bid exists, goto 2
5. If there is a time conflict...
      5.1.   Mark bid as CONFLICT
      5.2.   Select new random bid with required preference from the selected student
      5.3.   If no bid exists, goto 2
6. Create assignment
7. Mark bid as ASSIGNED
8. Goto 2

After running the bid auction a reminder to send out emails is given with a link to the appropriate messaging section.

Assignments

During the conference, the day captain supervises tasks using the assignments view. Here, all tasks for the day are listed with all slots:

- Start time
- End time
- Task name
- Task description (as popup)
- Available and total slots
- Hours

For each slot the assignment is visualized:

- Student
- Award hours (can be changed individually for each student)
- Status (ASSIGNED, CHECKED-IN, DONE, CANCELED)
- Comment

The hours and comment field can be changed directly. The status can be changed with a one-click interface, indicating the active status. New assignments can be created by choosing a student to assign, even if there are no slots available. For the student list, the following information is shown:

- First and last name (one field)
- Bid preference on the task
- Hours completed

Completed tasks (tasks with all slots assigned and marked DONE or CANCELED) are shown in a single row (without the slots).

Student Hours

The student hours lists completed and assigned hours for each student, as well as number of bids placed. It is used as an indicator for student activeness.

Messaging

Students need to be informed about changes in the enrollment status and assigned bids. These messages should be automatically generated but not sent automatically. Therefore, the system tracks these changes, reports them to the administrator, and allows him/her to send out email manually. The system should track:

• Type of change (PROFILE, ENROLLMENT, ASSIGNMENT)
• The change
• Generated message text

The administrator can change and send the message text individually or for all messages of the same type of change. The generated messages can be defined in the conference details section. In addition, custom messages can be send out to groups of students defined by their enrollment.