Coral User Guide

Micro/Nano Fabrication Center (MFC)
University of Arizona
What is Coral?

The OpenCoral Software System, often abbreviated as Coral, is a suite of software tools that is designed to help with the management and operation of advanced laboratories such as the Micro/Nano Fabrication Center (MFC) at the University of Arizona.

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For the user in the lab, Coral includes the following key capabilities:

- Allows equipment to be reserved in advance from the web interface.
- Allows the user to see who else is working with the same equipment.
- Reports equipment status.
- Reports equipment log, all comments by users and lab staff on the equipment.
- Replaces paper logs at equipment.
In the future, Coral will:

- Allow equipment to be enabled when in use and disabled if equipment has not been reserved.
- Control clean room access.
- Replace clean room log.
For the lab management and staff, it includes the following key capabilities:

- Maintain lists of qualified users on each piece of equipment.
- Allow certain users to have special privileges on specific pieces of equipment. For example:
  - An “operator” is allowed to charge others for equipment or staff time spent on their behalf.
  - An “instructor” is allowed to qualify other people to use that piece of equipment.
  - A “maintainer” is allowed to clear equipment problem and shutdown conditions.
  - An “engineer” is allowed to do all of the above.
More key capabilities for lab management and staff:

- Generate detailed laboratory usage information including equipment reservations, equipment usage, staff and training activities, and equipment problems and shutdown condition for use in generating laboratory charges and help to manage the facility.
- Monthly billing reports based on usage.
- Future interlock for equipment, so that a piece of equipment must be enabled in order to function.
- A reporting engine based on xReporter that supports usage and billing.
Create a Coral Account

- All clean room users will need a Coral account.
- To create an account, you must fill out the Coral request form from the MFC web site: http://mfc.engr.arizona.edu
- Click on the “Access Guide” link on the navigation menu to view the Coral request form.
Create a Coral Account

- The request form will also list all the pieces of equipment that a user can access.
- For current users, check pieces of equipment that you will be using and are trained to use.
- For new users, list the pieces of equipment that you need training to use.
- After the lab receives your request, it will be forwarded to your PI for review.
- After your request form has been approved, you will be sent a username and password.
- Once you are given approval to use equipment, you can make reservations.
Before using Coral, you need to install a recent version of Java Runtime Environment (JRE).

JRE can be obtained from Sun Microsystems’ web site at http://java.sun.com/javase/downloads/index.jsp.
Coral can be launched remotely from the MFC web site http://mfc.engr.arizona.edu by clicking the “Equipment Reservations (Coral)” link.
If this is the first time you are running Coral, some files will need to be downloaded from the Coral server.
Launch Remote Coral

- Two consecutive warning dialog boxes will ask if you want to trust Coral Remote (published by OpenCoral SysAdmin and Legion of the Bouncy Castle). Click **Run** to continue.
- Check “Always trust content from the publisher” box to avoid dialog box from appearing the next time you run Coral.
Launch Remote Coral

- You should see a “Starting Coral…” dialog box as Coral launches.

- Then, use your MFC username and password to login after the Coral Login Dialog shows up.
Launch Remote Coral

- You will see an application window similar to the one below, which indicates you have successfully logged in.
The stop light beside the name of an equipment indicates the status of the equipment.

- (red) indicates that the equipment is shut down, do not make reservation until equipment status is (yellow) or (green).
- (yellow) indicates that the equipment has minor problems, but can be operated at user’s risk or under the guidance of MFC staff.
- (green) light indicates that the equipment is up and available for use.
Make a Reservation

○ Before you make a reservation, please check the equipment status to make sure the equipment is available for use.
○ To make a reservation, click on the name of the equipment you wish to use.
○ Then, select the “Reservations” tab.
Make a Reservation

- Highlight the time slots that you wish to reserve the equipment for.
- Select “Reservation Actions” at the top menu bar.
- Select “Make”.

![Reservation interface diagram]
Make a Reservation

- Choose your project and account information.
- Then, click the “OK” button.
If your username appears on the time slots, your reservation has been successfully made.
You will not be able to reserve the following pieces of equipment by yourself:

- 372 (Polish)
- AGS (Etch)
- LPCVD (Deposition)
- Wafer Saw (Packaging)

In order to make a reservation for these pieces of equipment, please contact the MFC staff.
Delete a Reservation

- If you change your mind, you may delete your reservation before your time begins.
- To delete a reservation, click on your username on the time table to highlight your reservation.
- Select “Reservation Actions” from the top menu bar.
- Select “Delete”.

![Image of time table with reservation actions menu open]
An equipment needs to be shut down if the equipment:

- suffers from a serious failure that prevents the equipment from running normally and,
- requires a repair before anyone can use the system.

Contact MFC staff to review equipment status before complete shutdown, and the staff will report a shutdown through Coral, if necessary.

Reporting a shutdown will change the equipment status to (red).

When the equipment is again available, the status light will be (green).

If MFC staff is unavailable, please follow next procedures for reporting a shutdown of equipment on Coral.
To report a shutdown, click on the name of the equipment that needs to be shut down.

Select “Equipment Actions” on the top menu bar.

Select “Shutdown”.

Report a Shutdown
In the Shut down Report dialog box, please write, in details, the reasons of the shutdown.

Click the “Submit” button to submit your shutdown report.

The stop light beside the name of the equipment should turn (red) after the shutdown report submission is complete.
Report a Problem

- Submit a problem report if the equipment has one or more problems that deserve immediate attention, but are not severe enough to keep the equipment from being used.
- Reporting a shutdown will change the equipment status to [yellow] (yellow).
To report a problem, click on the name of the equipment that has a problem.

Select “Equipment Actions” on the top menu bar.

Select “Report Problem”.
In the Problem Report dialog box, please write, in details, the problems that the equipment or machine is having.

Click the “Submit” button to submit your problem report.

The stop light beside the name of the equipment should turn (yellow) after the problem report has been submitted.
Make a Comment

- We are always looking forward to your useful comments on our equipments.
- Making a comment will not change the equipment status.
- To make a comment on any piece of equipment, click on the name of the equipment that you wish to make a comment for.
- Select “Equipment Actions” on the top menu bar.
- Select “Make Comment”.

![Equipment Management Interface](image.png)
Make a Comment

- In the Comment Report dialog box, type in your comment subject and content.
- Click on the “Submit” button to submit your comment.
To log out of Coral after using it, select “Window” on the top menu bar.

Select “Exit” to close Coral.

You will be logged out automatically once you exit Coral.