

# ASCEM Resolutions for CEM4 Overload

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In order to relieve the overload of CEM4-Titan Krios in the recent period of time, ASCEM proposes resolutions from the booking system improvement, the open use of weekend, and the capacity increase by speeding up the data acquisition ( see **5. Other Improvements and Recommendations**). After the technique (AFIS) is upgraded for the larger capacity, the booking time per unit will be adjusted accordingly for optimizing the use of CEM4.

## 1. Booking

User submits a “**Service Request**” on DAAIS Online [Facility Reservation System](#) and can choose one day or two days of machine time. Then, a pre-schedule will be arranged by Manager according to the booking time appeared on the Reservation System and be published on a Google Calendar (see **ASCEM website homepage**) at any time for User to check easily. For special requests, User can make a note while applying and Manager will optimize the schedule overall. If User cannot take the weekend time (see **3. Machine Operation on the weekend**), then the case will be postponed. **A lab is the basic unit for submitting a “Service Request”. After a “Service Request” is machine operated, then another “Service Request” can be submitted by the lab.**

## 2. Confirmation and Cancellation

On Thursdays, Manager will slightly adjust the pre-schedule if there are approved Priority cases (see **4. Priority Application**). A confirmation request will be emailed to User for the machine time of the next week, and the confirmed schedule will be published on the Google Calendar after that. Un-confirmed cases will be considered as being canceled and abandoned. If there is an unexpected and urgent repair of machine, User needs to cooperate with a postponement, or even a re-schedule to the next week.

## 3. Machine Operation on the Weekend

ASCEM will optimize the time of using CEM4, including weekends. User who is arranged at the weekend must be A-level certificated. Before the User is certified as an A-level user by ASCEM, the weekend can only be used as an extension of Friday's case.

## 4. Priority Application [Google Form](#)

For urgent or long time ( $\geq 3$  days) use of machine, User can apply for the approval from ASCEM Steering Committee and obtains the priority order of using CEM4. The priority case will be scheduled in the next week if the pre-schedule of the next week is not yet confirmed; otherwise it will be directly scheduled in the week after the next week.

## 5. Other Improvements and Recommendations from ASCEM

- CEM4 EPU is now equipped with Beam Shift Mode (12um AFIS), which can speed up image acquisition by 2-3 times, proved by actual experiments conducted on CEM4. **Those that need a long time CEM4 operation can take advantage of the Mode to speed up experiments.** (The technology has the most potential for increasing efficiency). The EPU will be upgraded again at the end of June for a further improvement of the efficiency and the quality of the image acquisition (6um AFIS). The number of booking hours per unit will also be adjusted accordingly after that.
- Please consider to use CEM3 to collect data more and use CEM2 to screen more to achieve the effect of diversion and dredging for CEM4.
- To apply CEM4, User needs to be a CEM3 senior user first, i.e. the use time of CEM3 is more than 20 hours or the structure resolution above 3Å has been obtained.
- Off-Academia Sinica users can seek assistance from TPP if not easy to meet the conditions above.
- The use of weekend is one of the ways to relieve the CEM4 overload, please cooperate on the Manager arrangement as much as possible.
- TOMO is currently considered as ASCEM R&D, and the use time basically occupies 10%.