PFS acceptance schedule and FMOS decommission

I. Iwata (Subaru Telescope, NAOJ)

2014/01/10

1 Current budget status of PFS

The PFS project office (IPMU) reported to the NAOJ review committee in Nov. 2013 that there is more than 10M$ cost shortage to build the PFS instrument. They concluded that the cost reduction by descoping the instrument specifications (such as reduction of number of fibers) is limited. They will continue looking for new partners to join the project.

NAOJ's responsibility for PFS is to accept the instrument and to execute telescope and enclosure modifications of Subaru Telescope so that the telescope accommodates the needs of PFS. NAOJ cannot take a risk to execute such telescope / enclosure modifications before the funding status of the PFS project becomes clearer. IPMU requests NAOJ to support the development cost of the PFS itself (in addition to the telescope modifications). The response by NAOJ director general is that NAOJ will try to support the PFS, but due to the limited financial situation, the expected support from NAOJ will be limited.

2 Schedule of PFS commissioning

Fig.1 shows the commissioning schedule currently the PFS project holds as a baseline. In this schedule it is assumed that PFS spectrographs will be installed on the M3-IR floor, and the decommission of FMOS will take place after the beginning of PFS open use. As stated above, since the funding status of PFS is still uncertain, NAOJ will not be able to start the enclosure modifications, which will cost more than 2M$. So it is unlikely the original schedule shown in Fig. 1 is realized.

Fig. 2 shows the case in which PFS spectrographs will be installed on TUE-IR floor ('FMOS floor') and we will try to achieve the engineering first light of PFS in FY2017. In this case, the intervals between the installation works of four spectrographs are limited, and the involvement of Subaru Telescope staff to the installation work may be required. Note that this schedule is not yet confirmed by the PFS project office.

3 Location of PFS spectrographs

With the reasons listed below, Subaru Telescope requests the PFS project to install PFS spectrographs to TUE-IR floor.

- Cost reduction by using TUE-IR instead of making new M3-IR floor is expected to be 1M$.
- Subaru Telescope has a future strategy to put more emphasis on survey-type observations using HSC and PFS. Resources (such as human resources, electricity, and coolant) are not enough to realize the operations of these large instrument while keeping the operations of existing instruments.
- Flooring of M3-IR floor will affect the operations of NsIR where many instruments are now using. We should avoid more comlication on the operations of NsIR.

4 FMOS decommission schedule

In order to install PFS spectrographs on TUE-IR floor and to execute the engineering first light of PFS in FY2017, FMOS operation needs to be termined by the end of S15A. However, as stated above, the schedule of PFS is still uncertain, and Subaru Telescope wants to defer the determination of the decommission of FMOS (and modifications of the enclosure) until the PFS funding situations becomes clear. This is to avoid the risk of the long absense of prime-focus multi-object spectrograph for Subaru Telescope.

The PFS project office tries to find new partners, and there is still a possibility to see the improvement of the funding situation in FY2014. So in the call for proposals for S14B (to be issued in early Feb. 2014), I would like to propose to state 'there is a possibility of the termination of FMOS operation in S15A, depending on the schedule of PFS'.

5 Effect on open-use

If PFS spectrographs are installed on TUE-IR, there will be at least 3.5 years between the decommission of FMOS and the beginning of the open use of PFS. We should try to avoid the extension of a situation without prime-focus spectrograph as much as possible.

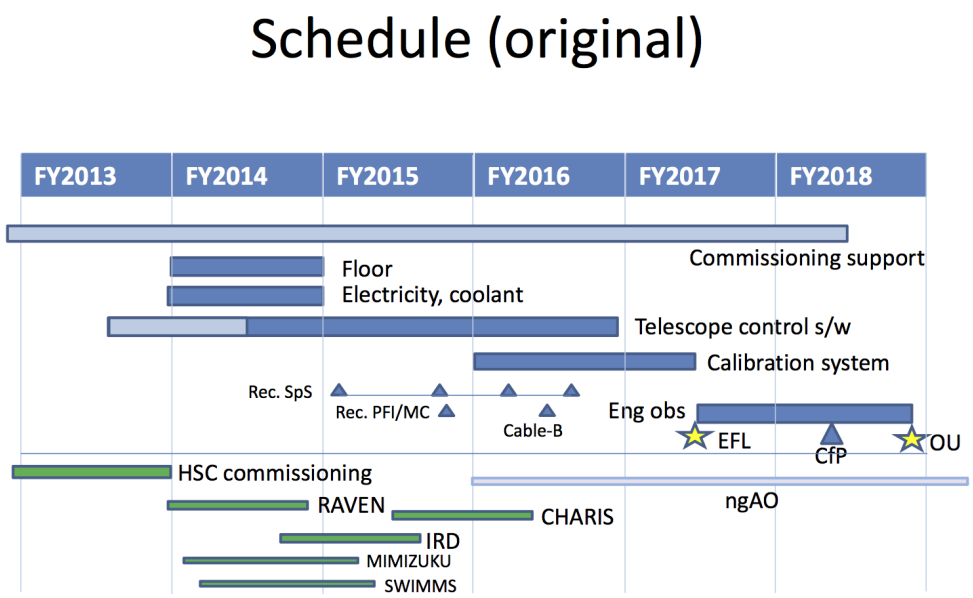

Figure 1: PFS commissioning schedule (original)

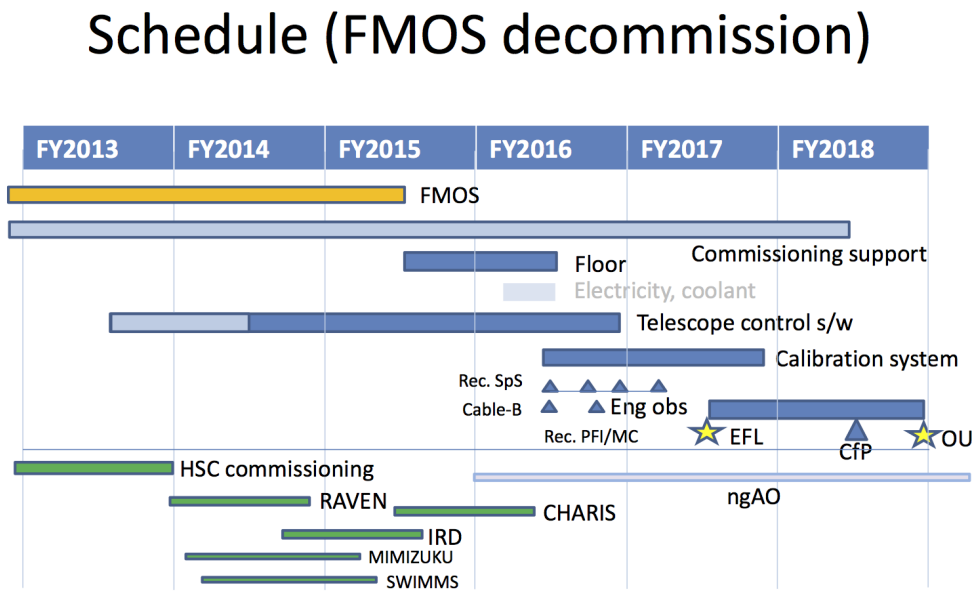

Figure 2: The fastest possible PFS schedule for the case PFS spectrographs are installed on TUE-IR floor.