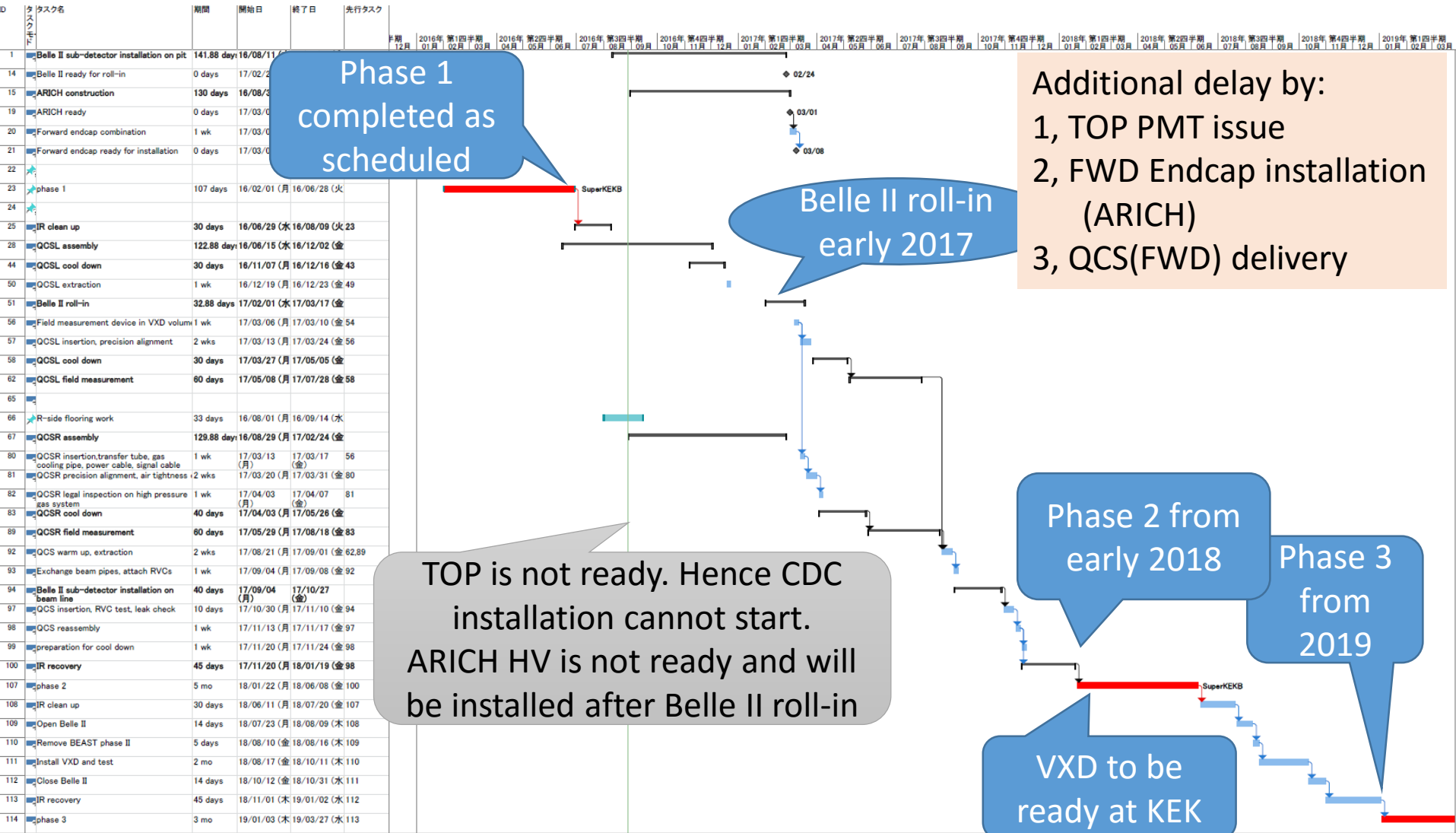


Availability schedule of the clean rooms

S. Tanaka(KEK)

Schedule

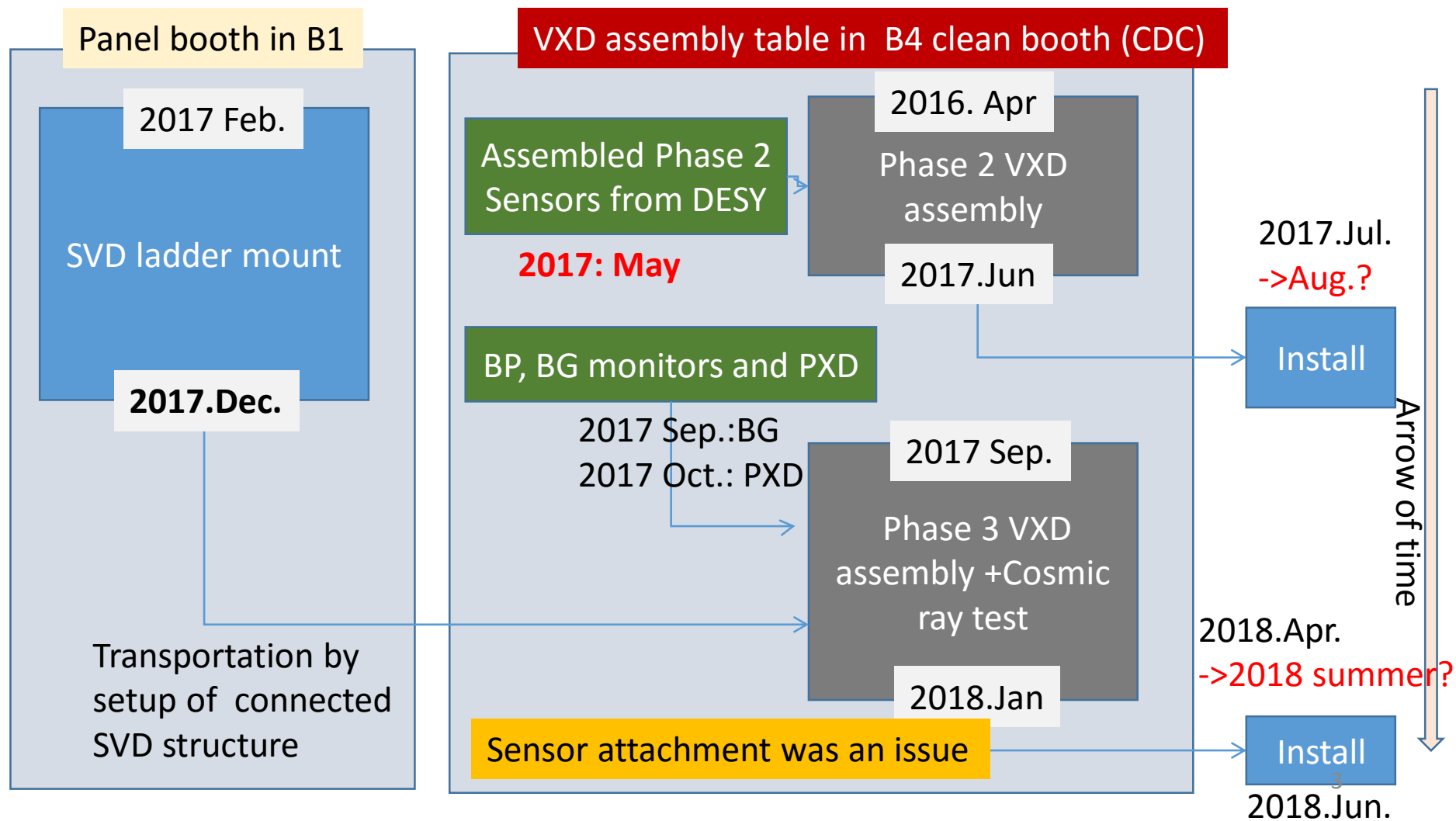
(Recently shown by Yutaka, but it will be decided in next B2GM)



Assembly work management

- We will assemble two sets of VXD system
 - VXD for BEAST phase II
 - VXD for physics run

Updated in last B2GM



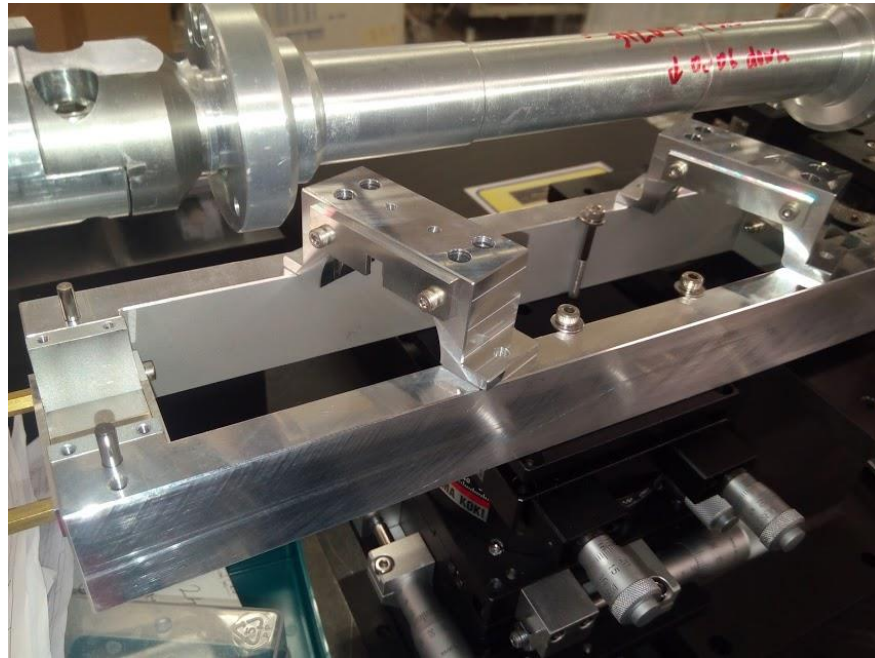
Clean booth options

- CDC clean booth in B4
 - After CDC installation, CDC group does not use this area
 - Expecting from the end of Oct. 2016
 - No clean air unit and air conditioner (need to prepare)
 - Noisy situation
 - Use of MARCO for CO2 cooling will not be issue
 - VXD Transportation will not be a issue
 - VXD table-> VXD trolley -> VXD installation space
 - Extension of the booth is possible
- ARICH clean booth in B4
 - ARICH group want to keep the booth until around Apr. 2017
 - After HV cable test, more realistic estimation can be done
 - On the case of putting MARCO inside of the room, some special safety control is necessary.
 - Validation of VXD transportation will be necessary
 - Lower height of the booth than CDC
 - ARICH group is asking to keep a fall back option as use of the booth for phase 2 VXD assembly
 - Use of this booth for phase 3 VXD assembly will not be issue.

- We are trying to make ARICH ready for the installation in Feb. 2017. If this happens, the B4 clean room is cleared before Apr.
- In case ARICH is installed in summer 2017, we still try to connect ARICH with the endcap ECL around Feb, and start cosmic ray test with global DAQ (outside of Belle II detector). This requires some space near E-Hut (we also have something to investigate: e.g. cabling from E-Hut to the ARICH).
- **However, we still have a concern on HV cables, which may delay our construction schedule.** There is possibility to postpone the connection with the endcap ECL. We might need to go back to the clean room after moving to outside due to some trouble.

Therefore, though we prefer to keep our clean room until ARICH is installed, we can consider to pass the room to VXD around Apr. if some arrangement is done. **However, we ask PXD group to keep the fall-back option.** The situation becomes clearer after HV cable test. It can also happen that we can first give the small room in the clean room, before we fully clear the room.

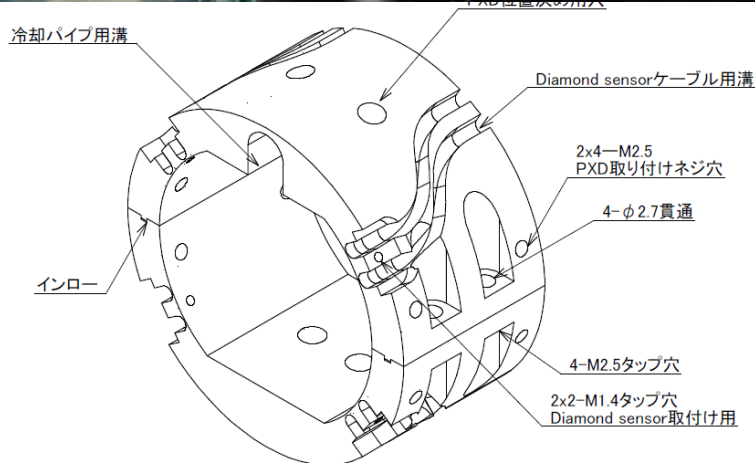
What is the VXD assembly work?



PXD mount block Alignment tool
has prepared (controlling xyz position)



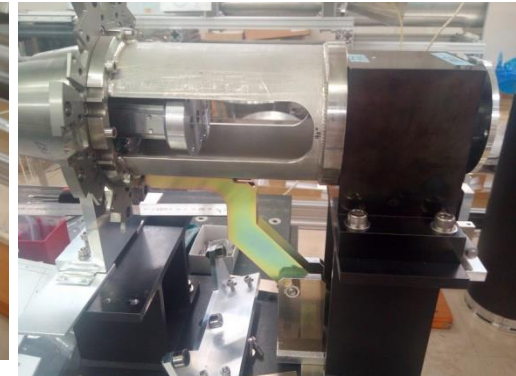
Position checking tool by Tscharlie



PXD mount block will be produced soon.
(ordered in last week)



Angle control
for PXD/BEAST mount




Support to avoid sagging

Rough steps of VXD assembly work

- VXD assembly is based on
 - VXD table alignment work
 - Heavy metal and beam pipe alignment
 - Assembling heavy metal and beam pipe on the table
 - PXD/BEAST mount block alignment
 - PXD/BEAST half attachment
 - 180 degree rotation (some setup change is necessary)
 - Another half of PXD/BEAST sensor attachment
 - SVD connection (cartridge on phase 2)

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If the movement of the table was happen, we have to redo those procedure again. (at least one month before sensor attachment)

Related items

- MARCO services for both options
 - High pressure air(who will take care it?)
 - Water cooling (who will take care it?)
 - 400 V AC power: the transformer in the Belle storage(not issue)
- N2 flow
 - There is no N2 service for both options
 - Use of N2 gas bottle might be an option for short term test
- Connectivity of cable/fibers from the booth to E-hut/Rack on Belle
 - After Belle roll-in, cabling work will not be a issue

Milestone until starting phase 2

- Apr. 2017(**May on ARICH booth**): VXD mechanical assembly start
- May 2017 : Phase 2 sensor delivery
- Middle of May?(**Jun**): attachment of phase 2 sensors
 - 1.5 month for system check
- Aug. - : phase 2 VXD installation
- Sep.: FWD Endcap installation
 - VXD System test
 - Cooling test by N2 and CO2
- Middle of Sep. or later: QCS, magnets, shields work start
- Jan. 2018: starting phase 2 operation

We should keep watch ARICH cable/connector situation