

Preparation at KEK

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For IBelle commissioning

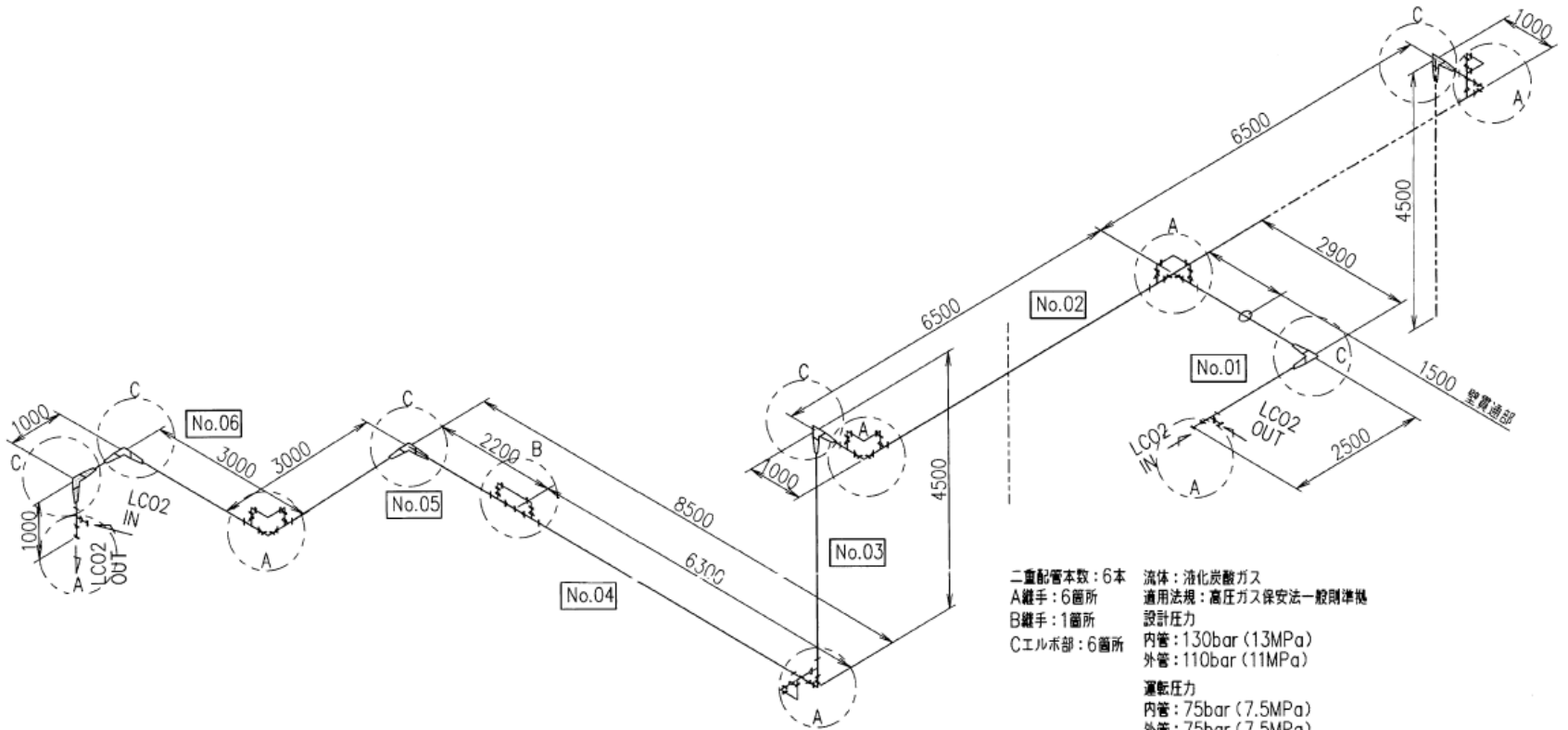
- CO2 cooling piping
 - From IBelle to E-hut junction box (~Mar. 2016)
 - From junction box to Dock (when?)
- AC power
 - Transformer from 200V to 400V (EU standard)
 - 600k yen (takes 3 weeks)
- Compressed air supply
 - (need information)
 - Flow rate and connector type
 - Where is the connection point at IBelle
- Water cooling
 - (need information)
 - flow rate and connector type
 - Where is the connection point at IBelle
- Any other (cabling for interlock, for control??)

N2 piping until top of Belle is finished

CO2 piping from IBBelle to E-hut



Piping design (double tube with foam isolation)



二重配管本数：6本
 A継手：6箇所
 B継手：1箇所
 Cエルボ部：6箇所

流体：液化炭酸ガス
 適用法規：高圧ガス保安法一般則準拠
 設計圧力
 内管：130bar (13MPa)
 外管：110bar (11MPa)

運転圧力
 内管：75bar (7.5MPa)
 外管：75bar (7.5MPa)

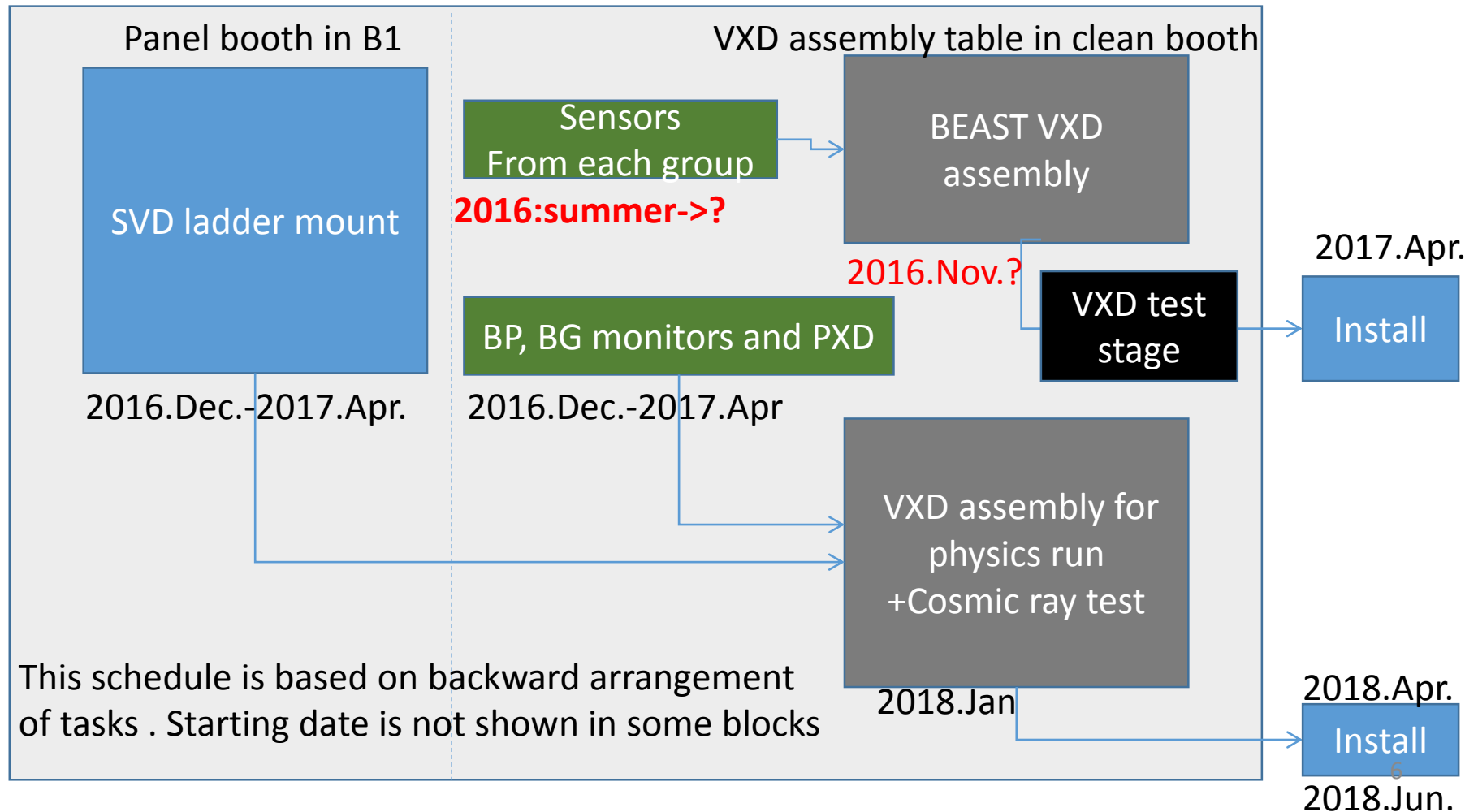
設計温度：-60℃
 設計温度：-60℃

検査項目 内管、外管それぞれに対して実施します
 気密検査、耐圧検査（水圧）、Heリーク検査

Preparation for phase 2

Assembly work management

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



Phase 2 commissioning

This is just rough sketch of tentative list. If you have some ideas /comments, please add or modify in the below list

- There are several different activities on phase 2
 - PXD+SVD commissioning (B3 control room)
 - Integration of VXD DAQ with Belle2 DAQ
 - Integration with Belle2 global Slow control
 - Alignment/Calibration (also storing database)
 - First try of RoI by SVD+CDC data
 - Optimizing Data Quality Monitors
 - Monitor commissioning (B3 room and machine control room)
 - BG rate v.s. PXD occupancy
 - Setting abort level -> Belle abort test
 - Environmental monitor feeding back to CO₂+N₂ control
 - Setting Alarm level
 - Monitor data can be seen at machine control room for beam operation and collimator control
 - BEAST phase2 sensors(B3 and machine control room)
 - Quick data feed back: for machine operation
 - Offline analysis: SR spectrum, data comparing with PXD, SVD
 - BG test :Touscheck, Radiative Bhabha, Beam gas
 - Injection BG study (feed back to Trigger veto/ PXD veto gate)

Cont'd

- VXD cooling commissioning(Cryogenics group control room)
 - Piping/cabling work before start system
 - Hum. Monitor by sucking air
 - Temp. control by Li- CO2 and N2 flow
 - Interlock test
 - Emergency sequence also with PXD/SVD slow control
- Also VXD assembly before installation(for phase2/3 @B1 room)
 - System test
 - Alignment work
 - Cosmic ray test for system debugging
 - And more...
- Preparation for VXD installation (B4 installation area)
 - Scaffoldings
 - Alignment
 - Brackets preparation for service work
- RVC preparation
 - Alignment
 - Service installation
 - Vacuum check
- Also checking availability of remote control for each items.
- Overlapping with phase 2 operation:
 - VXD assembly and their system test for phase 3 will start
 - Availability of PS and read out electronics at B1

Cont'd

- Beam operation commissioning (Belle Commissioning Group)
 - Beam collimator control (Injection/physics condition)
 - Supporting Belle Expert shifter
 - BG study,
- BG simulation related to each beam condition

Before starting commissioning

- KEK Contact:
 - Shuji Tanaka: Liaison for PXD, BEAST VXD group
 - Should cover anything other than items covered by secretary
 - Hiroyuki Nakayama: BG sim./monitors contact person
 - Belle secretary: Booth request, PHS, bike, car rental
 - On SVD case, there are KEK SVD member.
- What items will be discussed with the team
 - Place for equipment
 - E-rack request
 - Cabling/piping (i.e. E-hut to B1 room)
 - AC power
 - LV
 - Network connection (by cable if need)
 - Transportation and logistics (paper work for trading company)
 - Working tables, chairs....@B1
 - And more....

Milestone (a tentative)

We should define responsible person

- Apr. 2016 Phase2 VXD assembly exercise
 - BP alignment (KEK:Tanaka+Kohriki)
 - BEAST sensor mount test (by **who?**) (at B2GM?)
 - VXD transportation test (KEK+MPI: Tanaka+David) (at B2GM?)
 - Cabling/piping test (with dock? At somewhere) (by **who?**)
- Jul. 2016
 - IBelle commissioning (w.o. transfer tube) (MPI)
 - B1 space preparation (electronics/E-racks) (**PXD/SVD/BEAST group**)
- Aug. 2016(->Nov. ? Requested by C. Marinas)
 - BEAST sensor shipment -> delivering in Sep. (**BEAST group**)
- Oct. 2016(**2017 Jan.**)
 - Start final VXD assembly (contingency two months) (KEK:Tanaka+Kohriki)
 - Starting CO2 piping -> pre-commissioning with some heat load (MPI?)
- Dec. 2016 **2017 Mar?**
 - Completion of VXD system in B1(KEK) **At least, one month for transportation From EU (customs, paper work...)**
- ~Mar 2017
 - System test (PXD/SVD/BEAST) 3 month at most
- Apr. 2017 Phase 2 VXD installation

Should define: RVC test plan, VXD installation test->EDI, CO2+N2 cooling test
Please prepare each plan and discuss in B2GM! (who will come to KEK from when)

backup

