GDE meeting@Sendai Mar 3-6, 2008

Detail discussion of S1 Global at STF

H. Hayano (KEK)

Need to be solved for S1 global

1. Cavity package collaboration from FNAL and DESY.

need to start negotiation.

2. Cavity package installation into Cryostat.

installation consideration started.

3. Schedule conflict with STF phase 2 and phase 3.

tunnel access construction will conflict. -> postpone it.

4. Cryogenics cooling power is enough?

need to check. (upgrade of 2k heat exchanger and collecting compressor?)

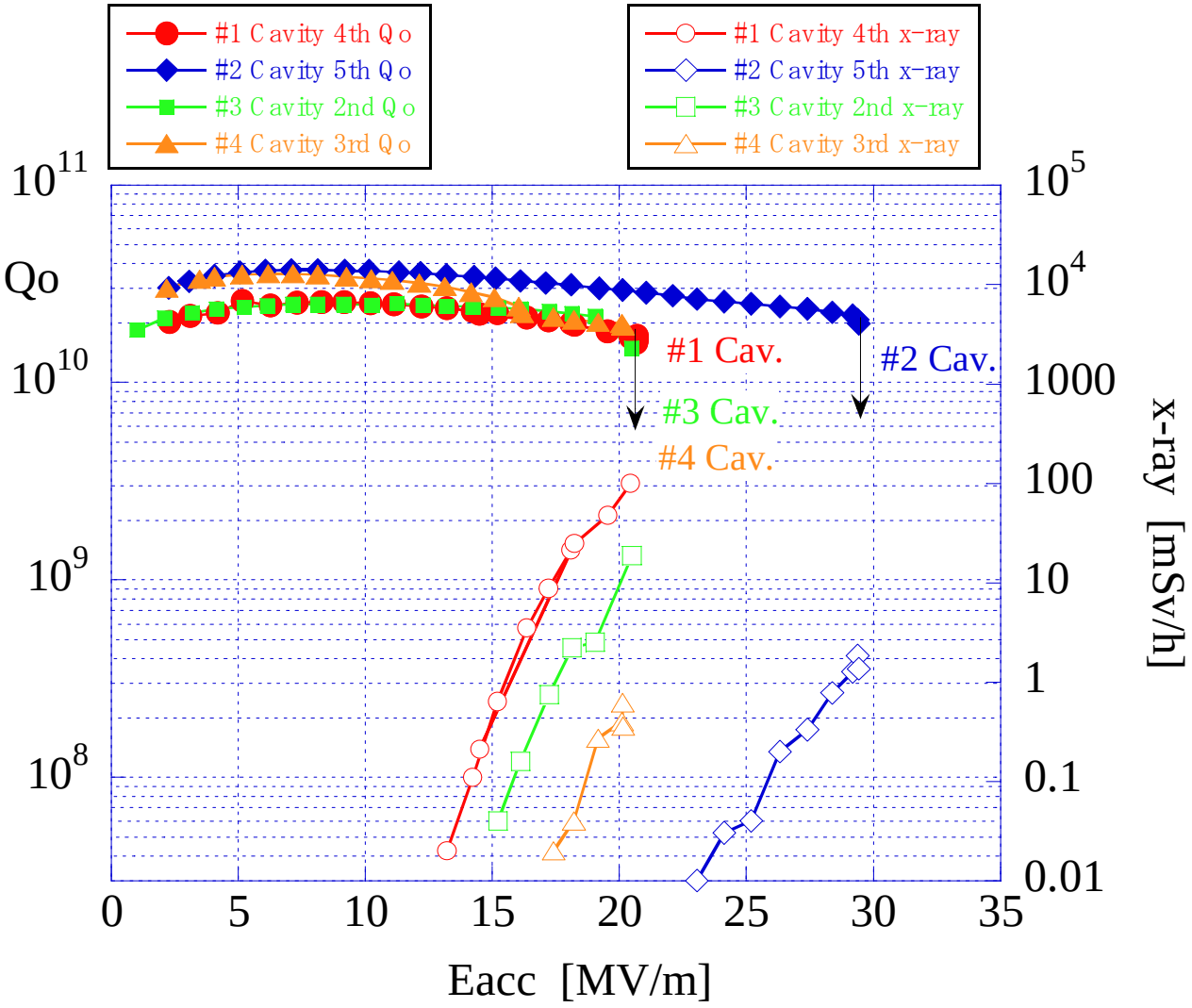
5. RF power, distribution, LLRF, cables enough?

need to check. Maybe OK.

6. KEK Budget and man power support is enough?

need to check. Maybe OK.

TESLA style : Final Performance in Vertical Tests



#2 and #4 Cav.
additional
EP (20 μm)
H_2O_2 Rinse (1h)
Hot Rinse (1h)
HPR (16h)

Eacc,max
#1 20.8 MV/m
#2 29.4 MV/m
#3 20.5 MV/m
#4 20.2 MV/m

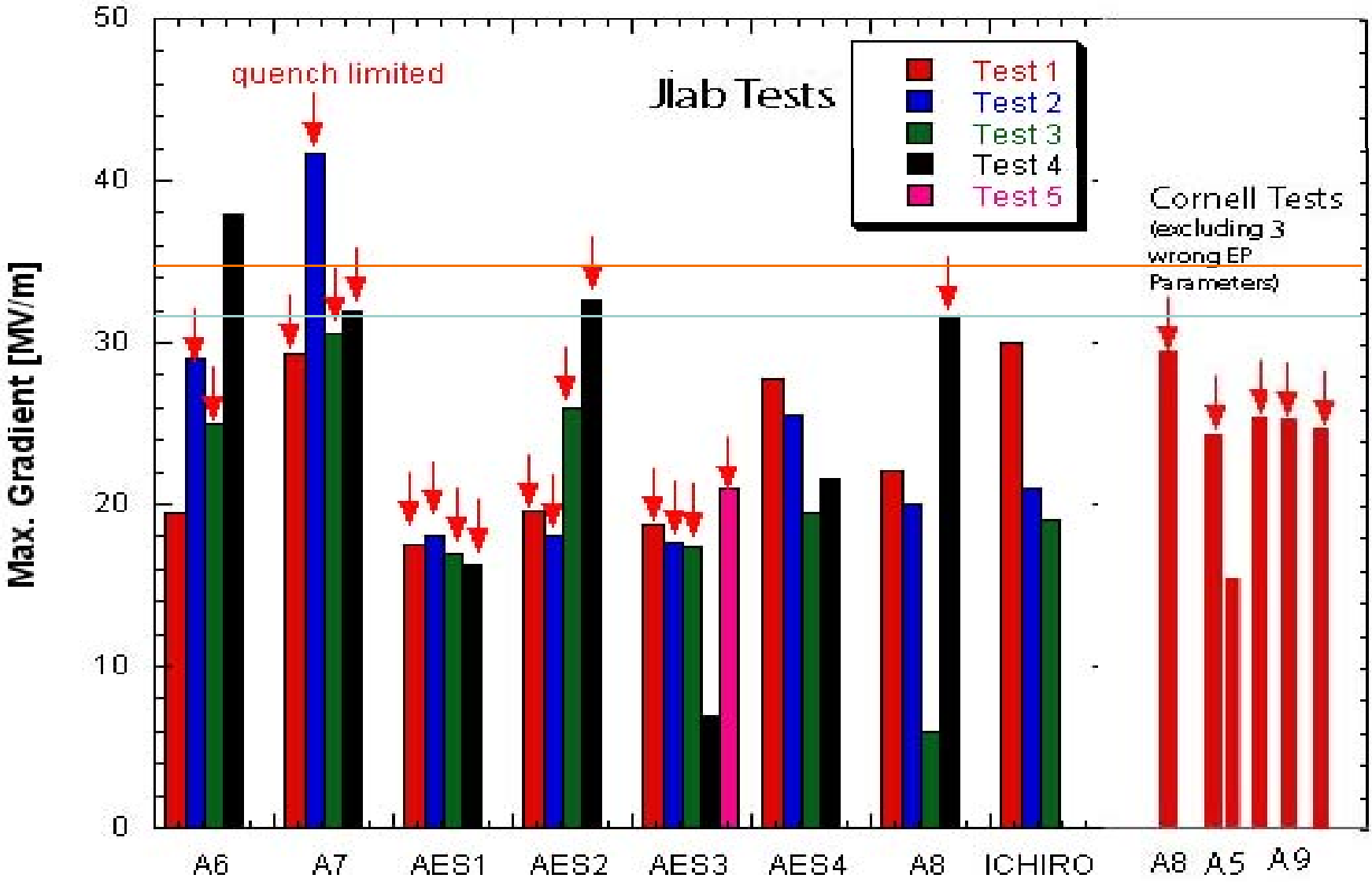
high Qo > 10^{10}

2 TESLA-style cavities (MHI) #5 and #6
are under fabrication with improved EBW, may deliver in April 2008.

US

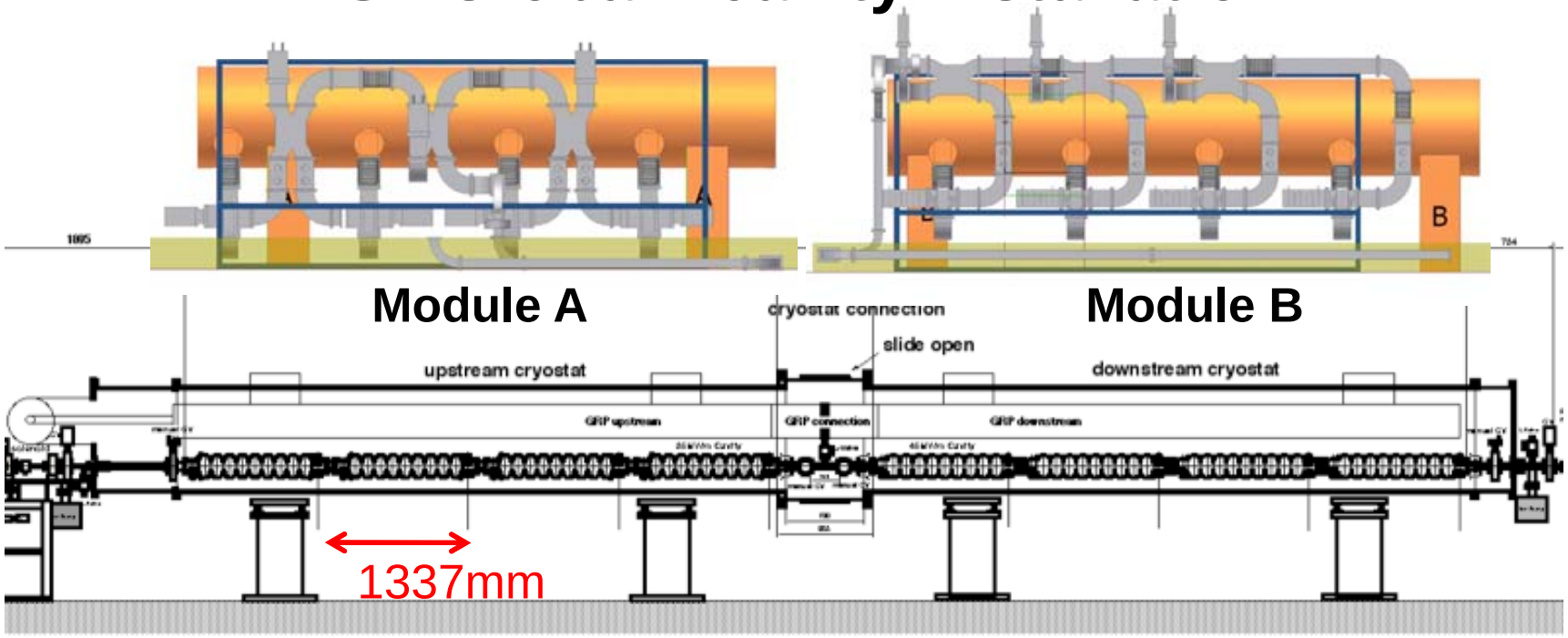
9-cell Test Results

Mostly Jlab and Some Cornell



Those go to CM2; candidates will be from new production.

S1 Global : cavity installation



TESLA-style

STF1	#3	#4	#2	#1
2008.4-10	20MV/m	20MV/m	29MV/m	21MV/m

If we go S1 global for next

Not yet decided for next

TESLA-style

S1 Global	(DESY or US) #2	#5	#6
	>32MV/m 29MV/m	??MV/m	??MV/m

(or TESLA-style#7?)

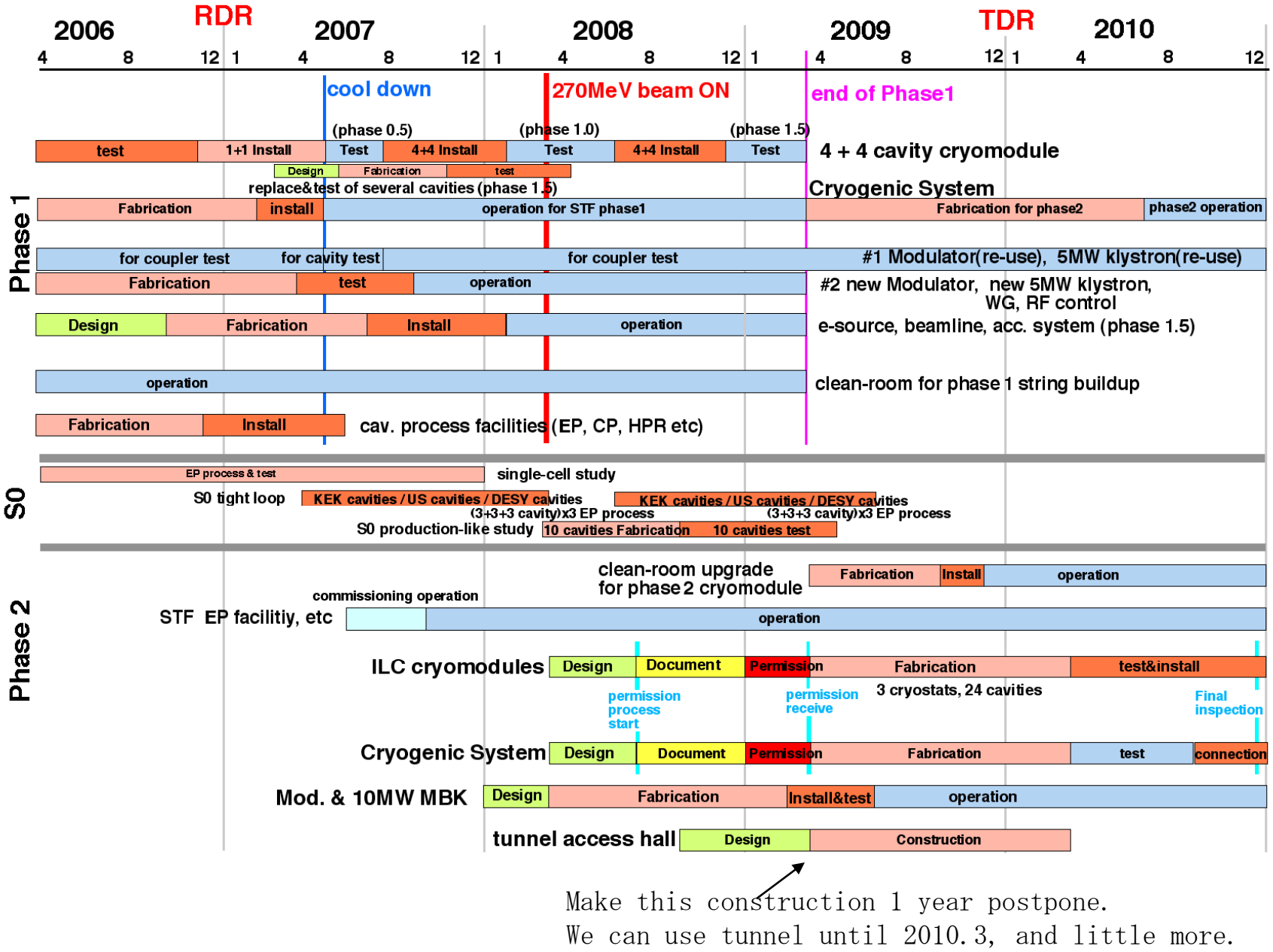
TESLA

DESY1	DESY2	FNAL1	FNAL2
>32MV/m	>32MV/m	>32MV/m	>32MV/m

(or LL #7? #8?)

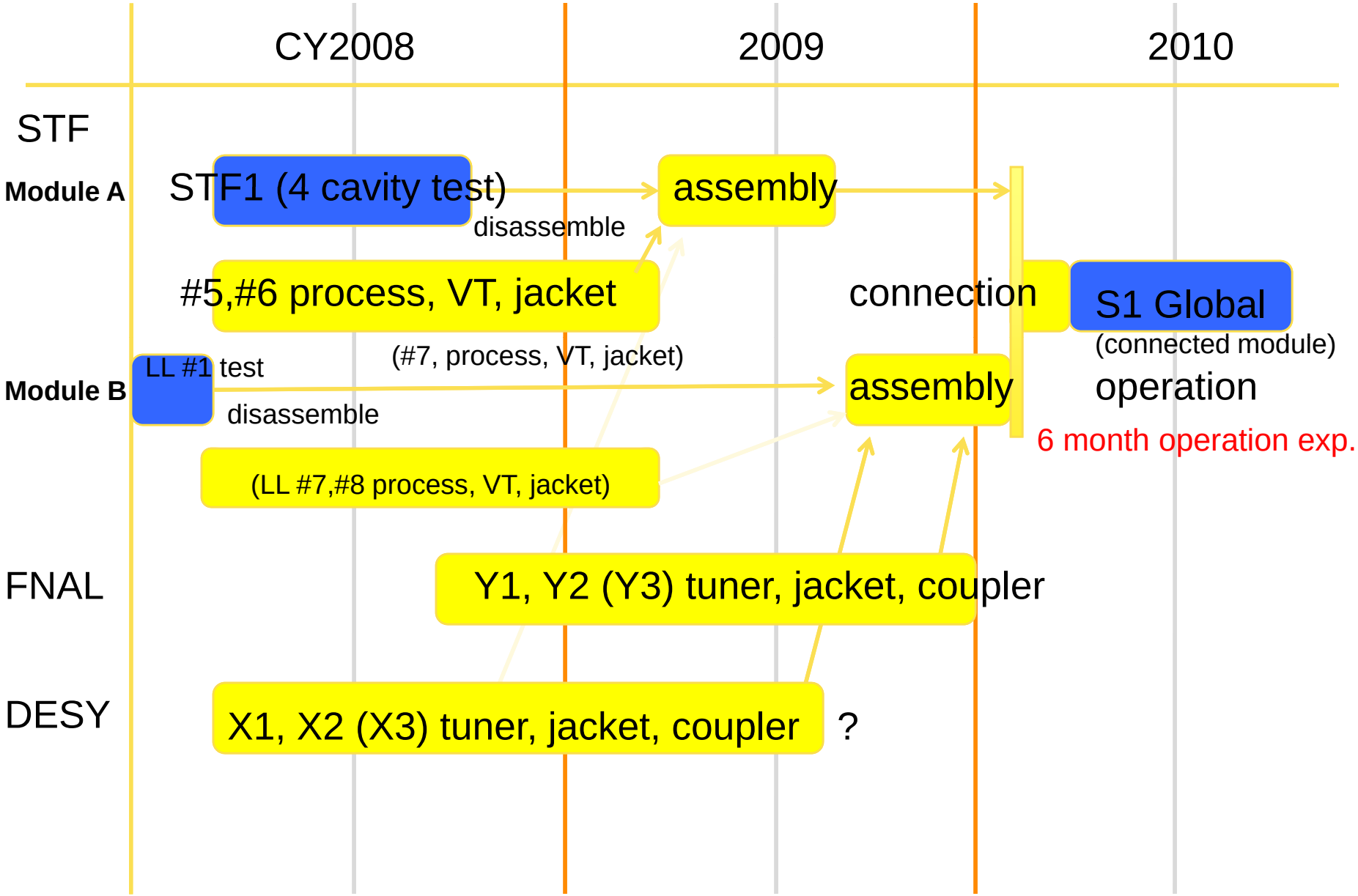
STF long-term Plan

H. Hayano 04112007

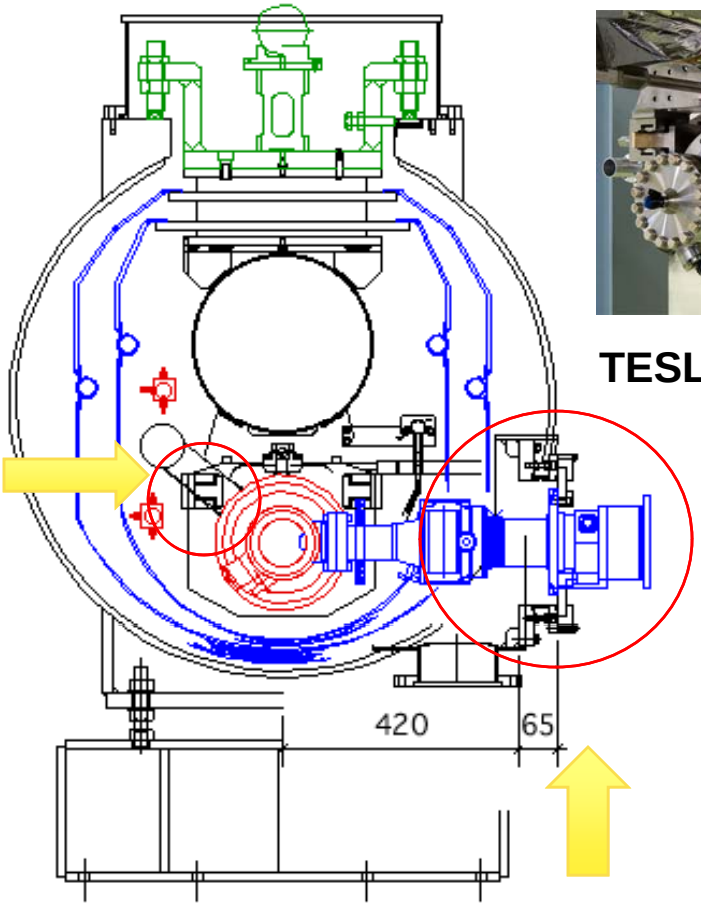


Make this construction 1 year postpone.
We can use tunnel until 2010.3, and little more.

Possible Schedule plans



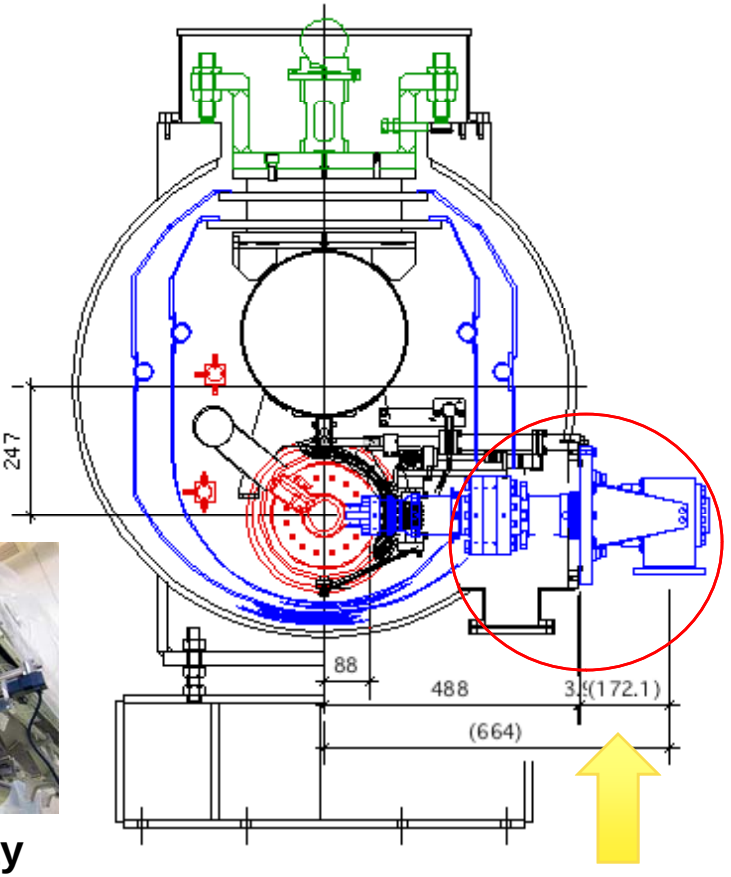
Cavity Installation into Cryomodule



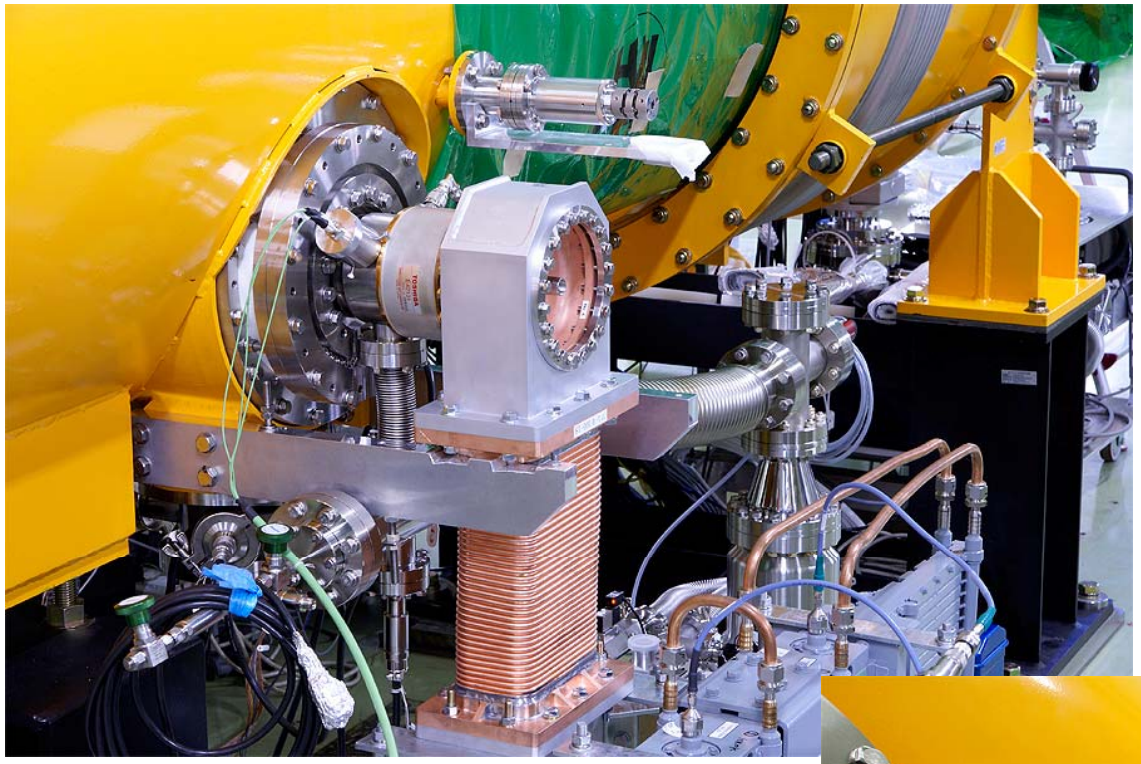
Module A

TESLA-style Cavity

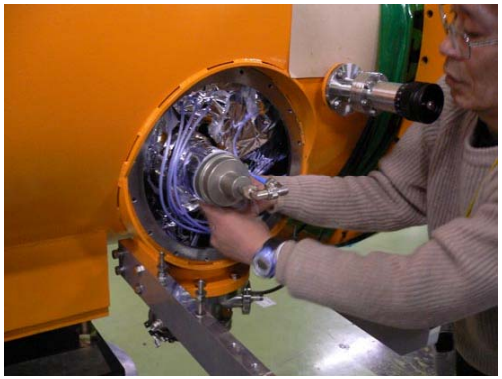
Module B



LL type Cavity

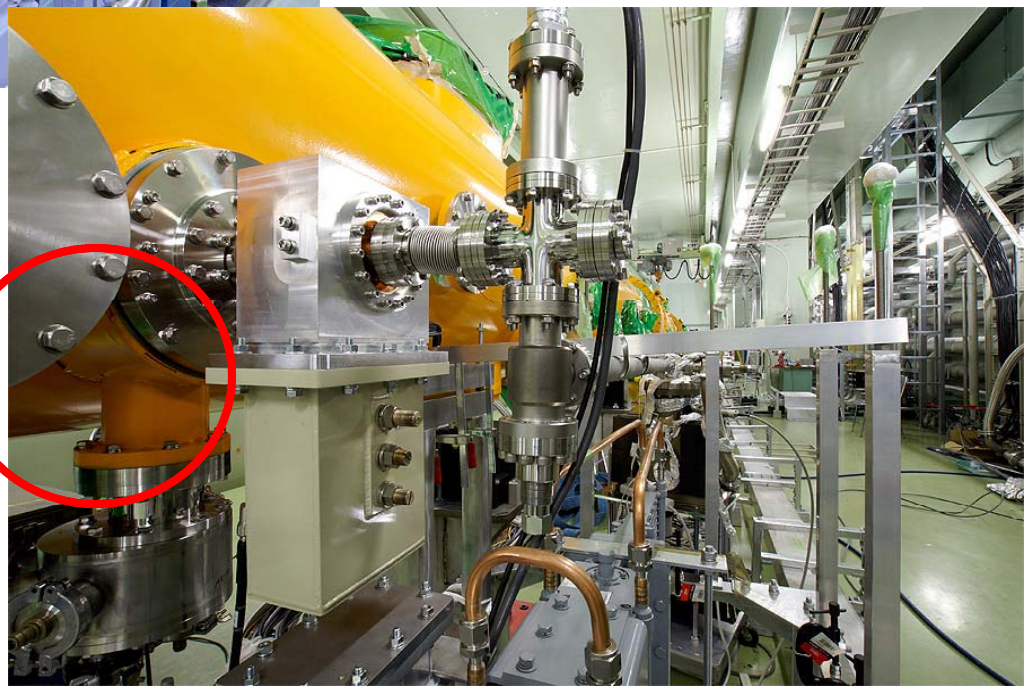


Module A
(for TESLA-style)



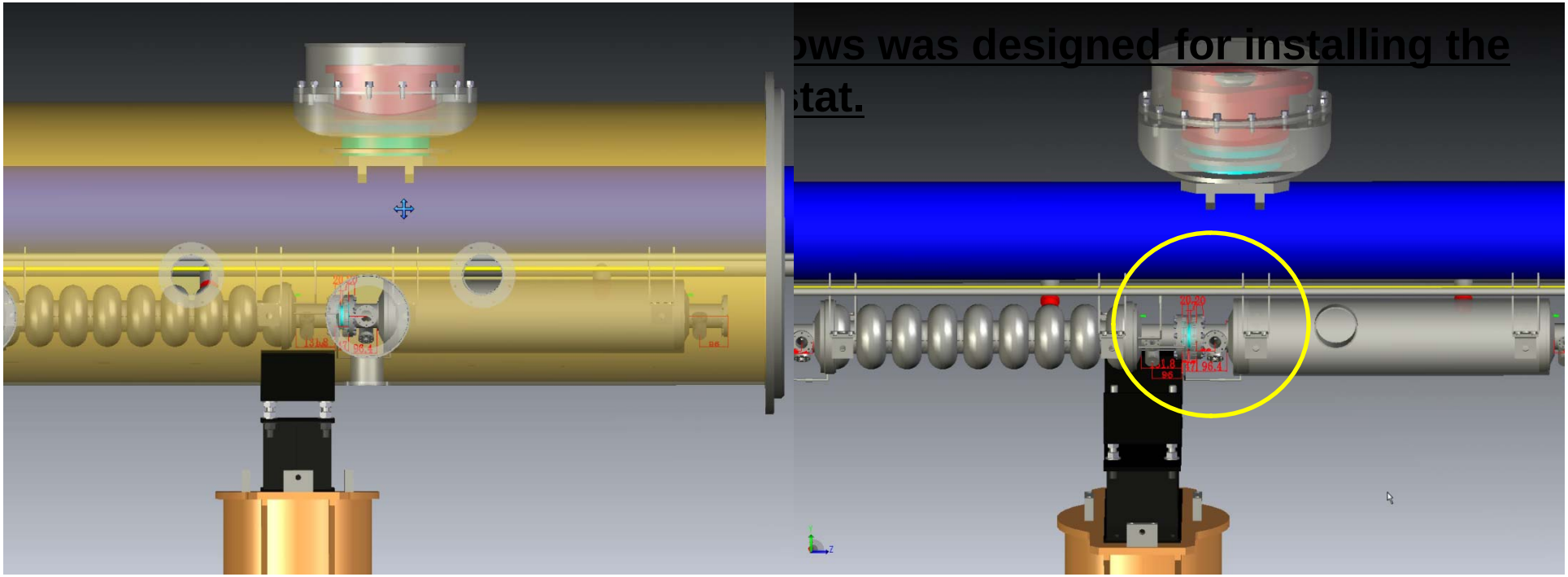
No coupler assey holder

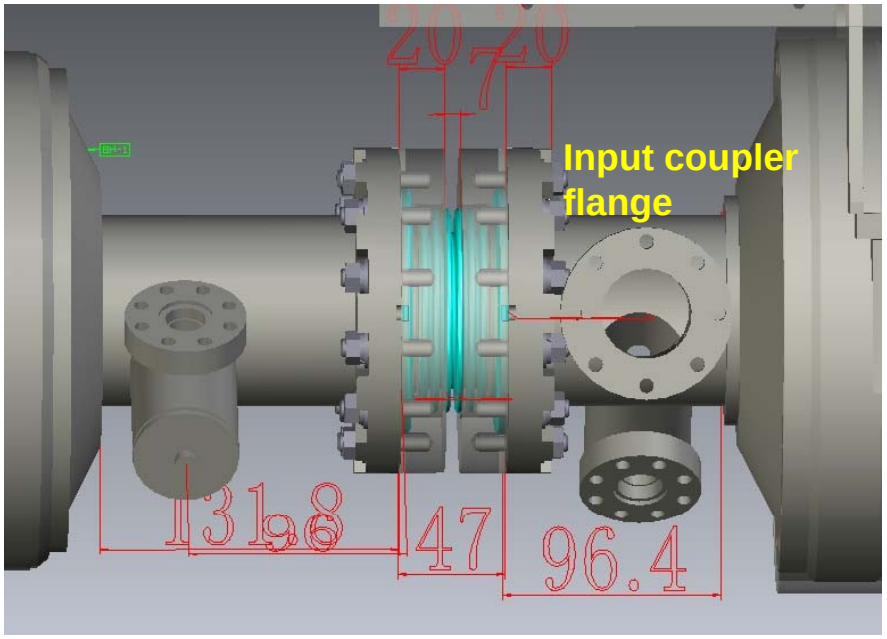
Module B
(for LL cavity)
S1 Global



DESY Cavities in STF cryomodule for S1

- **The design length between input couplers in the STF cryomodule=1337mm**
  - **Design lengths of the STF cavities = 1258.6 mm for BL cavity, 1272 mm for LL cavity**
    - **Lengths of connection bellows and flanges: 78.4 mm for BL cavity, 65.0 mm for LL cavity**
  - **Design length of the DESY cavity = 1293 mm**
    - **Lengths of three DESY cavities which have been delivered to KEK: 1290, 1290, 1286**
    - **Length of connection bellows and flanges in STF cryomodule: 43 mm**



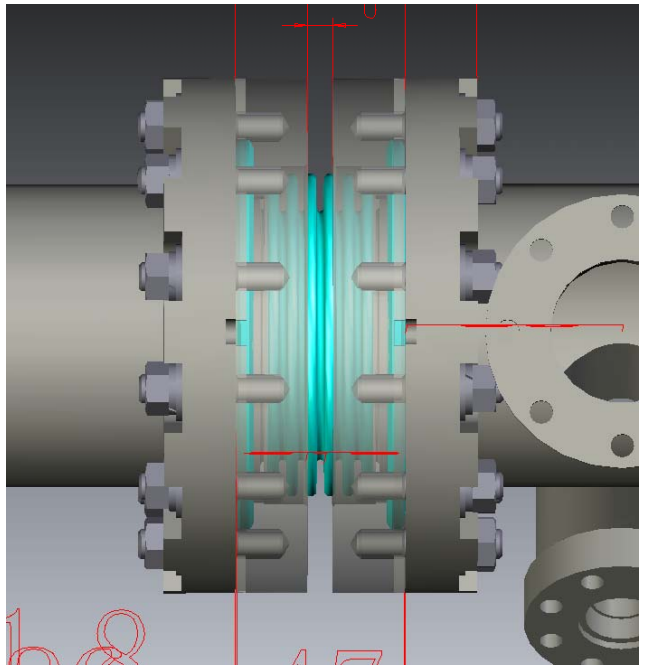


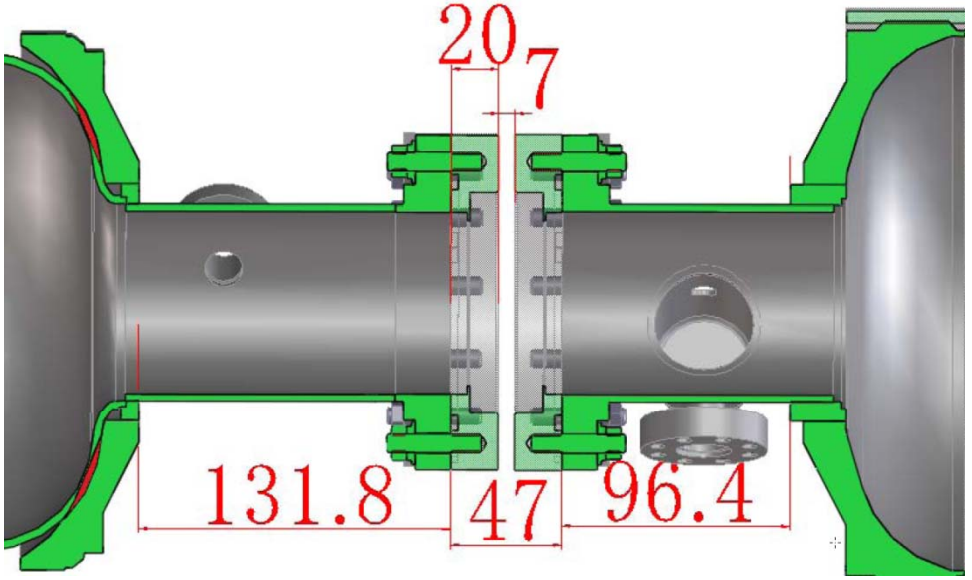
Designed Connection Flanges and Bellows

Two flanges with bellows are tapped.
The screwed holes do not penetrate the flanges.

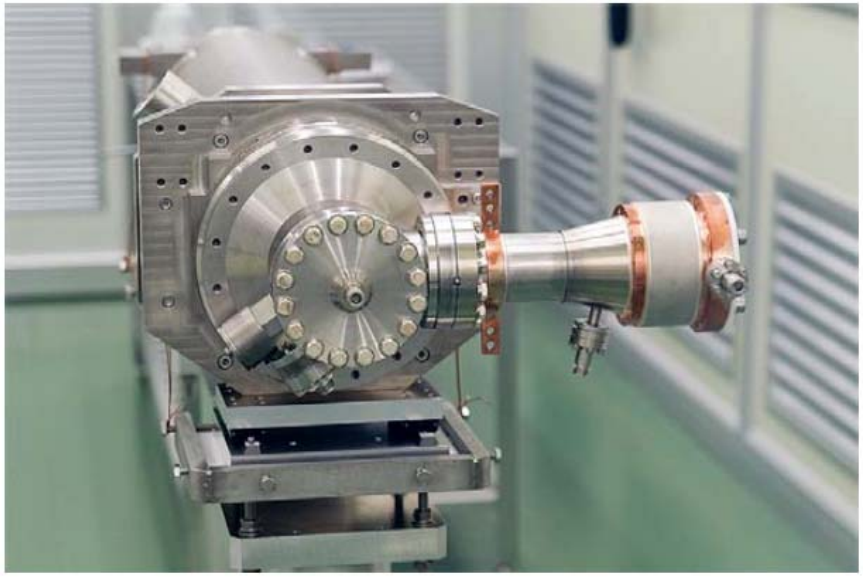
- **Designed bellow length: 29.1 mm**
- **Number of waves: 6**
- **Changeability of length: ±2mm**

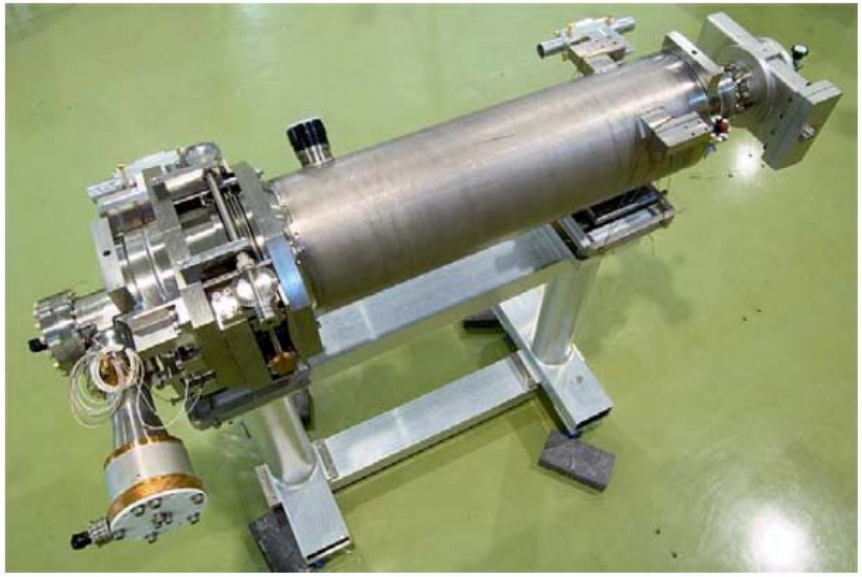
Designed for 1290 mm cavity





Expected contribution: cavity package





cavity package: Cavity, Jacket, Tuner, coupler,
Mag. Shield, HOM pickups,
monitor pickup,
coupler installation assembly,
motor driver, piezo driver, associated instruments.

If it is special motor, piezo.

Assembly participation, operation participation.

***Sending them back after experiment.**