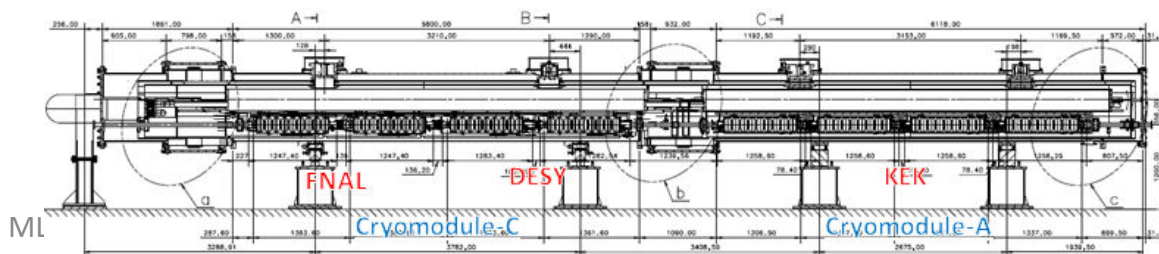
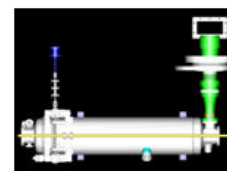
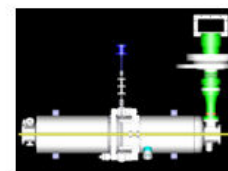


# Status of the S1 Global effort

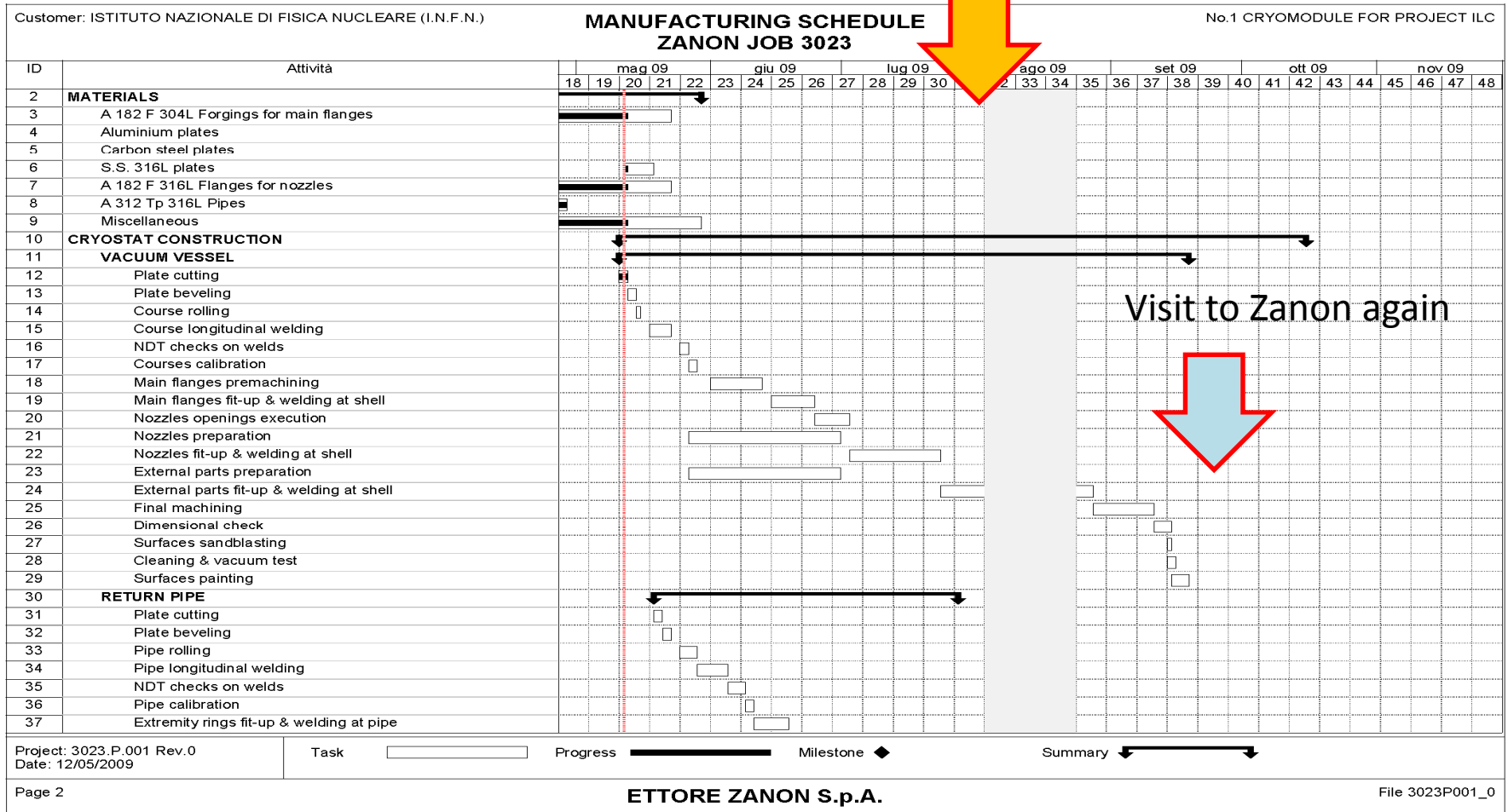
Norihito Ohuchi

# Construction and assembly schedule of S1-G cryomodule

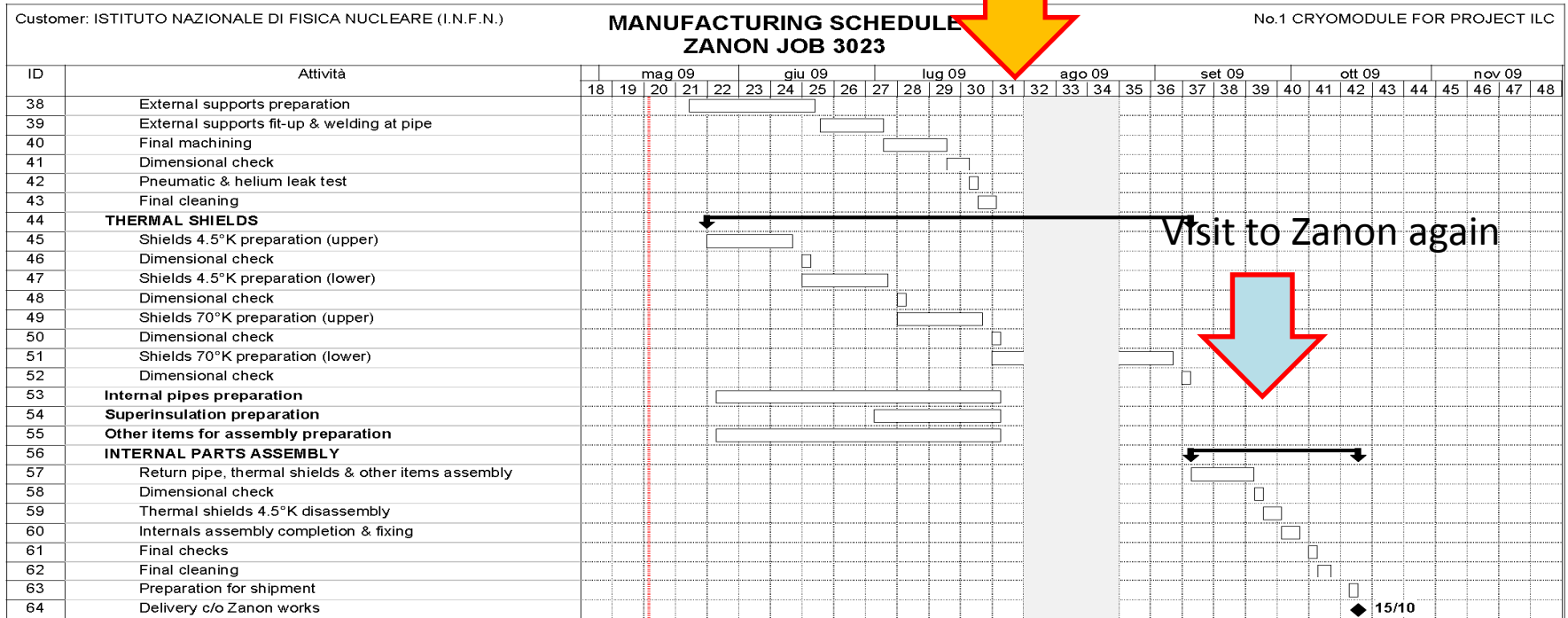
	2009/Jul	2009/Aug	2009/Sep	2009/Oct	2009/Nov	2009/Dec	2010/Jan	2010/Feb	2010/March	2010/April	2010/May
<b>Module-C Cryostat</b>											
Vacuum vessel			→								
Gas return pipe	→										
KEK sensor work		→									
Thermal shields			→								
Internal pipe			→								
SI			→								
Other items			→								
Internal parts assembly				←							
Transportation to KEK						←					
<b>Module-A Cryostat</b>											
Modification [Module-B cold test (for 5K shield)]	→		←		←						
<b>KEK cavities</b>											
#5(S1G-KEK#1), #6 cavities 3 Vertical Tests											
#7, #8, #9(S1G-KEK#5) cavities 2 V. T.	←										
Cavity jacketing						←					
Clean room works								←			
Module-A assembly work									←		
<b>FNAL, DESY cavities</b>											
Preparation of tools for clean room work			←								
Prep. of tools for assembly out of the clean room			←								
DESY cavities: transportation to KEK						→					
FNAL cavities: transportation to KEK							→				
Clean room work								←			
Module-C assembly work									←		
<b>Installation of Module-A and Module-C into tunnel</b>											
										←	



# Construction schedule of Module-C components by Zanon/INFN



# Construction schedule of Module-C components



Construction of the module components by Zanon/INFN are on schedule.  
 The main components will be completed in the middle of September.  
 The module components will be shipped to KEK at 15<sup>th</sup> October.

Project: 3023.P.001 Rev.0  
 Date: 12/05/2009

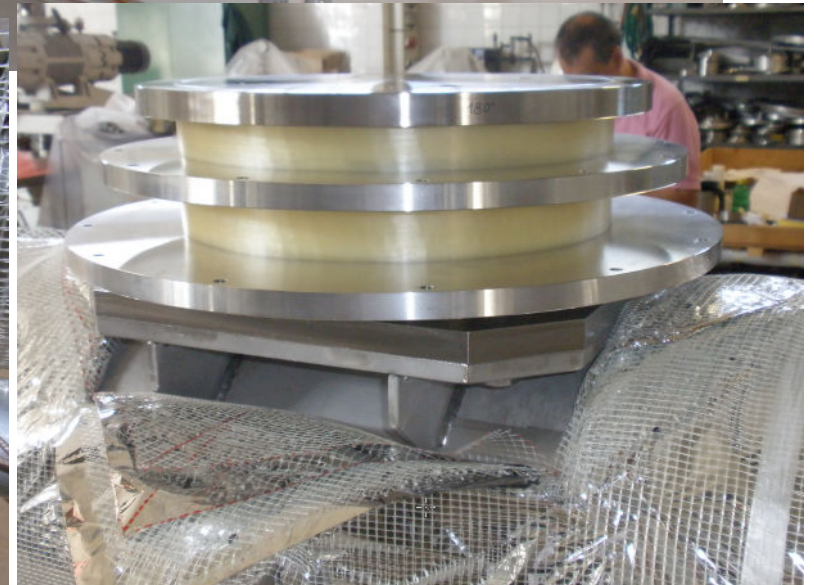
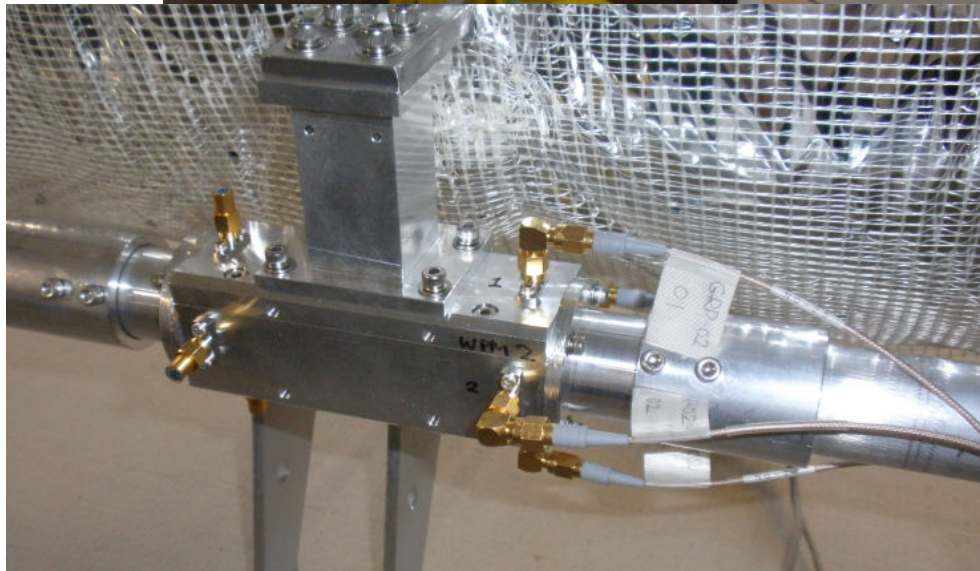
Task  Progress  Milestone  Summary

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ETTORE ZANON S.p.A.

File 3023P001\_0

# GRP/Support Posts/WPMs

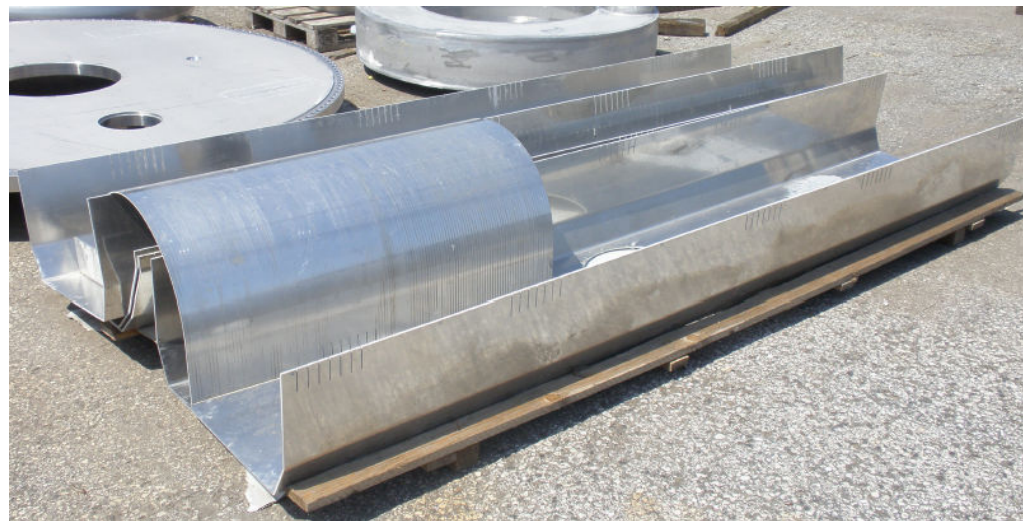




# Vacuum Vessel



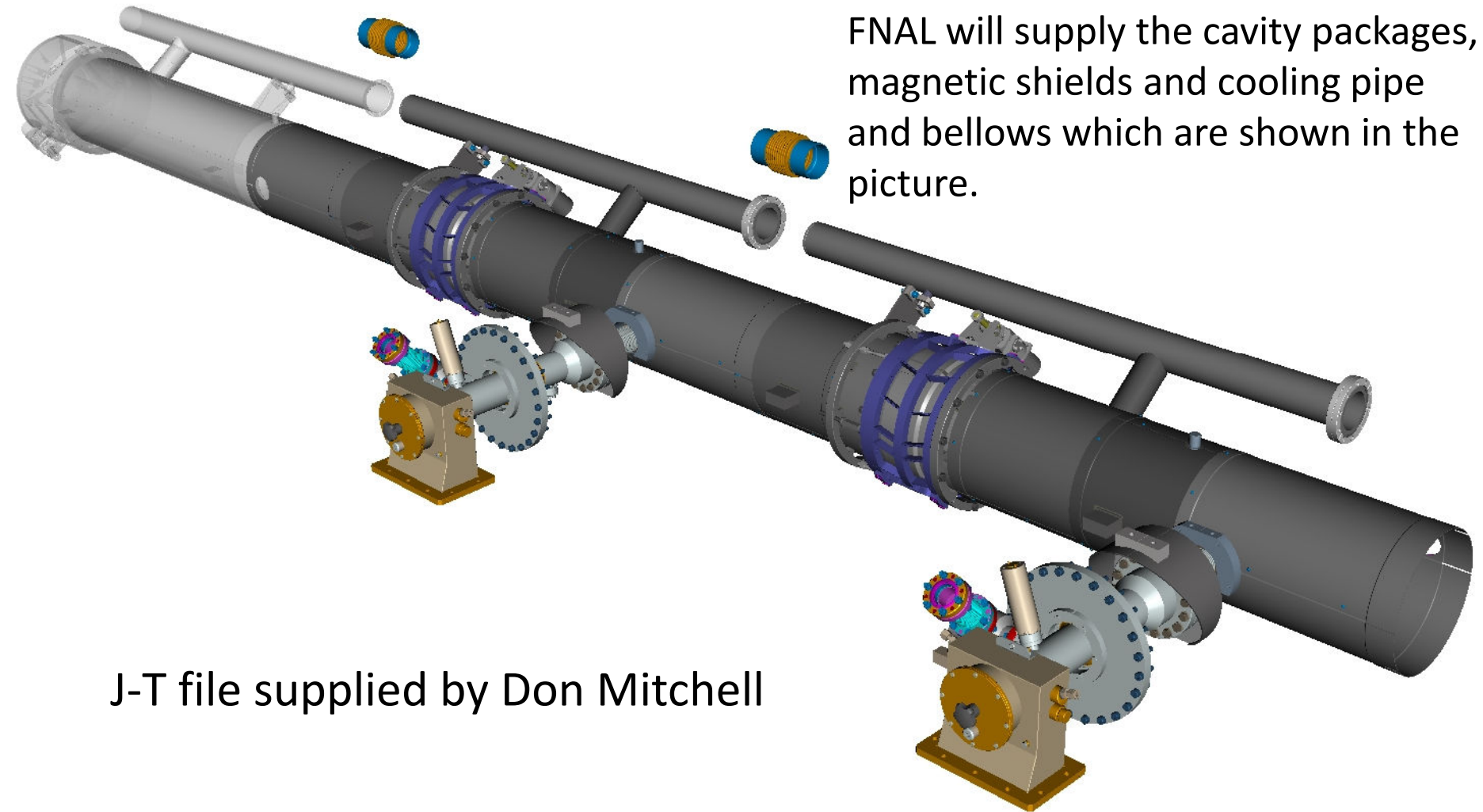
# Thermal shields/Support fixtures





# FNAL cavity preparation (FNAL Cavities w/ Mag Shields)

FNAL will supply the cavity packages, magnetic shields and cooling pipe and bellows which are shown in the picture.



J-T file supplied by Don Mitchell



# Component list for the FNAL cavity packages

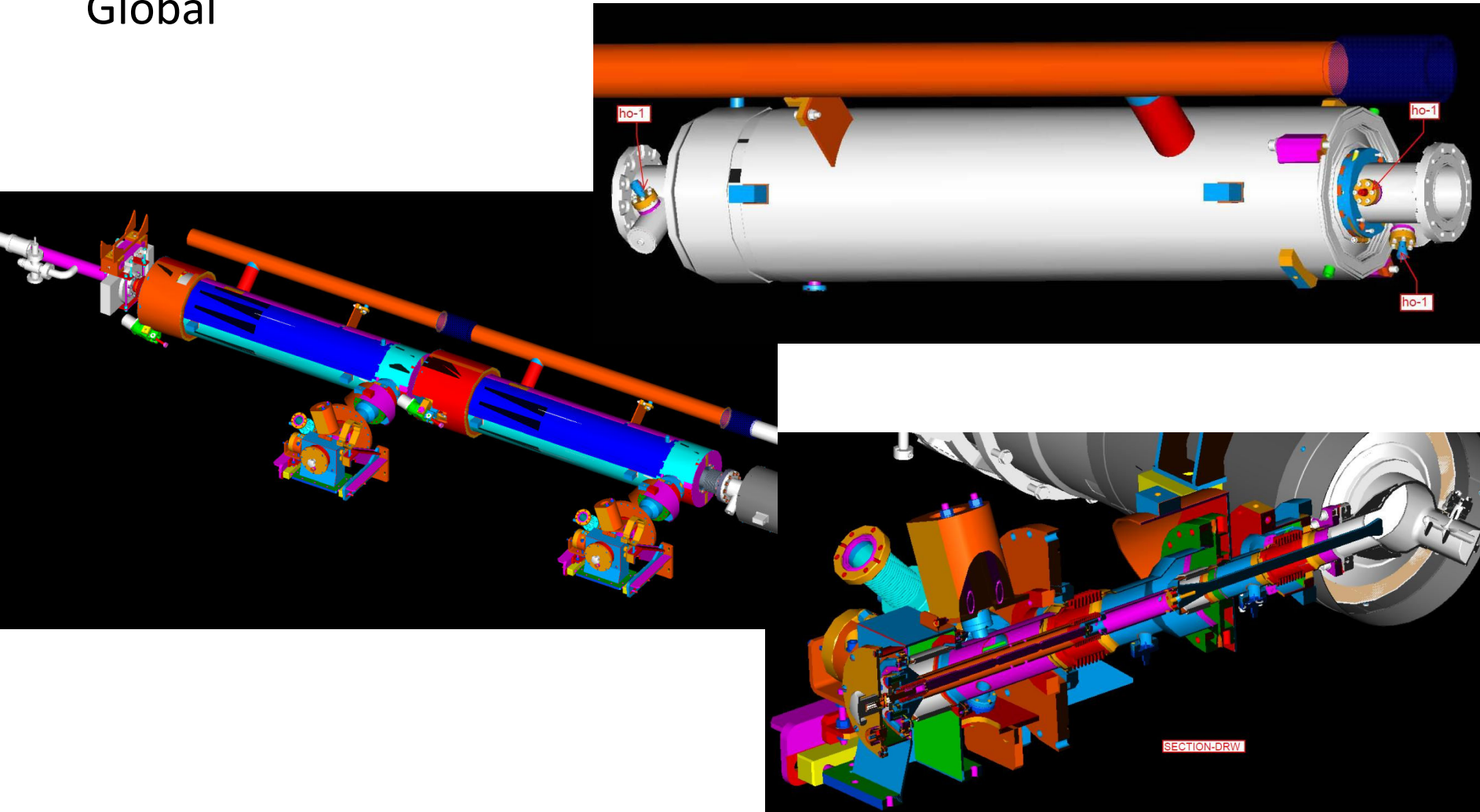
Items	Sub-components	Sub-sub-comp.	Sub-sub-sub-comp.	Responsible Institute	No. of pcs	No. of spares	Remark	Drw.No
Cavity-jacket	Main body			FNAL	2 sets			ca-1
	2K Lhe supply pipe and bellow			FNAL	2 sets		2K Lhe supply pipe is welded to jacket after vertical test	ca-2
	SI			FNAL	2 sets			ca-3
Tuner (Blade-slim)	Main components			FNAL/INFN	2 sets		The control system should be included. The control of the tuner need to be discussed.	
		Motor-ASSY		FNAL/INFN	1 set			tu-1
		Blade-ASSY		FNAL/INFN	1 set			tu-2
		Bolt and nut		FNAL/INFN	10 set			tu-3
			hexagon bolt	FNAL/INFN	1		M8X25	
			washer-plane	FNAL/INFN	1			
		Cable (motor, piezo)		FNAL	2 sets			tu-4
	Sensor for the tuner position		FNAL				tu-5	
Input coupler	Main components			FNAL	2		including assembling bolts and nuts	
		Coupler-ASSY		FNAL	1 set			in-1
		Shield-ASSY		FNAL	1 set			in-2
		Diagnostic cable		FNAL	2			in-3
		Thermal intercept		FNAL	2 sets			in-4
		Bolt and nut		FNAL	8 set			in-5
			hexagon socket bolt	FNAL	1		M6X35	
		washer-plane	FNAL	1				
	Seals		FNAL	1			in-6	
HOM coupler	Main component			FNAL	2 set			
		antenna-ASSY		FNAL	3			ho-1
		RF cable		FNAL	4			ho-2
		Monitor coupler		FNAL	2			ho-3
		Monitor cable		FNAL	2			ho-4
	Thermal intercept		FNAL	2 sets			ho-5	
Feedthrough flange for RF cables, monitor cables				FNAL	2			
Gate valve				KEK	1 set		At one end in the string, the gate valve is required.	
	Valve support-ASSY			KEK	1 set			
		support-ASSY		KEK	1 set			ga-1

# FNAL/KEK preparation for S1-G FNAL cavities

- FNAL/KEK S1 Global cavity discussion on 15 July.
  - Fermilab will supply 2 dressed cavities to KEK by the end of December 2009 for assembly into the S1 Global cryomodule.
  - The conditions of two cavities are decided for transporting to KEK.
  - The magnetic shield, internal cables, beam pipe bellows, T-shape pipes and feed-throughs are confirmed.
  - Since the FNAL and DESY cavities both use the DESY coupler design, it was suggested that DESY personnel do the coupler installation on all 4 cavities.
  - Contact persons:
    - Jim Kerby: the FNAL S1 Global contact person
    - Norihito Ohuchi: S1-Global integration work at KEK
    - Eiji Kako: Assembling the S1- Global cavity strings
    - Hitoshi Hayano: S1-global tests
- Don Mitchell supplied the solid model of the FNAL cavities.
- Tug Arkan supplied the drawings for the assembly toolings.
- Eiji Kako and Shuichi Noguchi will visit FNAL for studying the preparation for HTS and discussing the assembly and alignment procedure at 10<sup>th</sup> to 11<sup>th</sup> September.

# DESY cavity preparation

3D solid model for two DESY cavities with magnetic shields for S1-Global





# Component list for the DESY cavity packages

Items	Sub-components	Sub-sub-comp.	Sub-sub-sub-comp	Responsible Institute	No. of pcs	No. of spares	Remark	Drw.No
Cavity-jacket	Main body			DESY	2 sets		2K Lhe supply pipe welded to jacket	ca-1
	2K Lhe supply pipe and bellow			DESY	2 sets			ca-2
	SI			DESY	2 sets			ca-3
Tuner (Saclay)	Main components			DESY	2 sets		The control system should be included. The control of the tuner need to be discussed.	
		Mortor-ASSY		DESY	1 set			tu-1
		support-ASSY		DESY	1 set			tu-2
	Cable (motor, piezo)			DESY	2 sets		control system	tu-3
	Sensor for the tuner position			DESY	2 sets			tu-4
Input coupler	Main components			DESY	2set		including assembling bolts and	
		Coupler-ASSY		DESY	1 set			in-1
		Shield-ASSY		DESY	1 set			in-2
	Diagnostic cable			DESY	2			in-3
	Thermal intercept			DESY	2 sets			in-4
		Bolt and nut		DESY	8 set			in-5
			hexagon socket bolt	DESY	1		M6X35	
			washer-plane	DESY	1			
	Seals		DESY	1			in-6	
HOM coupler	Main component			DESY	2set			
		Antenna-ASSY		DESY	3			ho-1
	RF cable			DESY	4			ho-2
	Monitor coupler			DESY	2			ho-3
	Monitor cable			DESY	2			ho-4
	Thermal intercept			DESY	2 sets			ho-5
Feedthrough flange for RF cables, monitor cables				DESY	2			
Gate valve				KEK	1 set		At one end in the string, the gate valve is required.	
	Valve support-ASSY			KEK	1 set			
		support-ASSY		KEK	1 set			gs-1
		O-cramp		KEK	2 set			gs-2
			O-cramp roller	KEK	1			
			KEK	2				

# KEK proposal for the preparation of DESY cavities

- Completion of the component list of DESY cavities and confirmation of the S1-G module construction schedule between DESY and KEK.
- Preparation of the assembly procedures of cavities/module, tooling and alignment method.
- Need to discuss with DESY people for the actual work.
- Eiji Kako and Norihito Ohuchi would like to visit DESY at 18<sup>th</sup> September, and talk about the above items with DESY people.