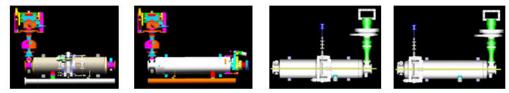
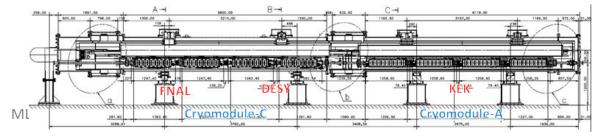
Status of the S1 Global effort

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
Module-C Cryostat											
Vacuum vessel											
Gas return pipe											
KEK sensor work	_	•									
Thermal shields			•								
Internal pipe				10/15							
SI											
Other items	→										
Internal parts assembly			4								
Transportation to KEK				-		•					
Module-A Cryostat											
Modification				+			•				
[Module-B cold test (for 5K shield)]	→	•	→								
KEK cavities											
#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										د ک	*
FNAL, DESY cavities											
Preparation of tools for clean room work			4		,	•					
Prep. of tools for assembly out of the clean room			4			Þ					
DESY cavities: transportation to KEK						•					
FNAL cavities: transportation to KEK							•				
Clean room work							•				
Module-C assembly work			<u> </u>					-	-	•	
Installation of Module-A and Module-C into tunnel										•	





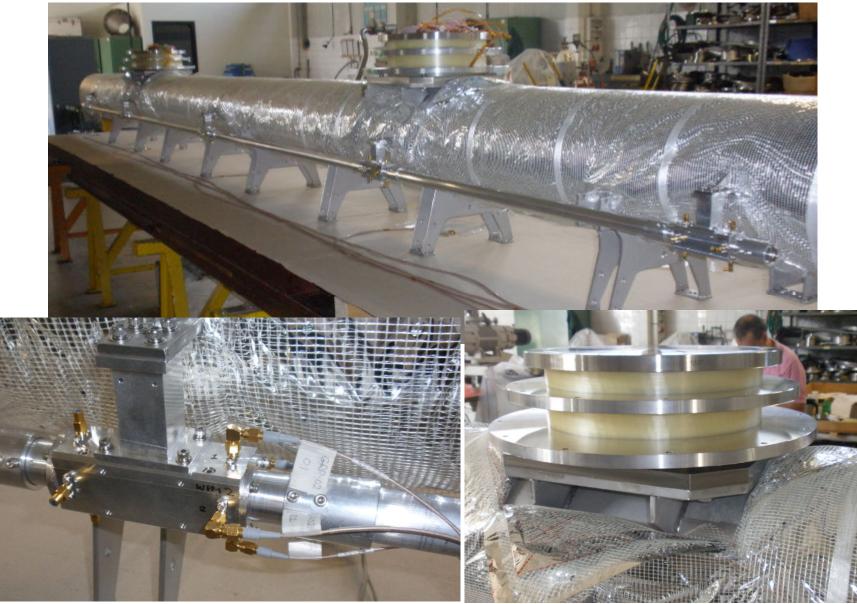
Construction schedule of Module-C components by Zanon/INFN

Custor	mer: ISTITUTO NAZIONALE DI FISICA NUCLEARE (I.N.F.N.)	MANUFACTURING SCHEDULE ZANON JOB 3023										Ļ	No.1 CRYOMODULE FOR PROJECT ILC														
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2	MATERIALS	18	8 15	3 20	21	22	23 1	24 2	25 2	5 27	28	29	30		2 33	34	35	36	37	38 3	9 40	41	42	43 4	4 45	46	4/ 4
3	A 182 F 304L Forgings for main flanges																·····										
4	Aluminium plates			1	<u> </u>												·····										
5	Carbon steel plates																										
6	S.S. 316L plates			····	<u></u>	1						······					·····						·····				
7	A 182 F 316L Flanges for nozzles																										
8	A 312 Tp 316L Pipes			1		1					-																
9	Miscellaneous			•••••							-																
10	CRYOSTAT CONSTRUCTION			-																			ᡝ				
11	VACUUM VESSEL			-																◄							
12	Plate cutting			İ																					1	(*************************************	
13	Plate beveling				1													\ \	r• _	· •		-7 -			_	•	
14	Course rolling			0														V	IS	π	0	Za	nc	DN	aga	ain	1
15	Course longitudinal welding			1			1										· · · · · · · · · · · · · · · · · · ·			n	T	1			0	0.0.0	
16	NDT checks on welds																										
17	Courses calibration																										
18	Main flanges premachining																				- [
19	Main flanges fit-up & welding at shell																				- [
20	Nozzles openings execution																					7					
21	Nozzles preparation																										
22	Nozzles fit-up & welding at shell																										
23	External parts preparation																										
24	External parts fit-up & welding at shell																										
25	Final machining																										
26	Dimensional check					ļļ																	ļ				
27	Surfaces sandblasting																		[]								
28	Cleaning & vacuum test																										
29	Surfaces painting																										
30					<u> </u>																						
31	Plate cutting					ļ																	ļ				
32	Plate beveling																						ļ			ļ	
33 34	Pipe rolling					\square																	ļ				
	Pipe longitudinal welding					ĻĻĻ						ļļ							ļ	ļ		ļ	ļ			ļļ	
35	NDT checks on welds					ļ																	ļ			ļļ.	
36 37	Pipe calibration						ļL]	_																		
	Extremity rings fit-up & welding at pipe																										
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Construction schedule of Module-C components

Custom	er: ISTITUTO NAZIONALE DI FISICA NUCLEARE (I.N.F.N.)		MA	NL					SC 302		DUL	E			7					No.	1 CR	YOMC	DULE	FOR	PRO	JECT	ILC
ID	Attività			mag	09			gių Os	Э		lug	1 0 9			ago (09		ļs	et 09			ott	09		n	v 09	
38	External supports preparation	18	19	20	21	22	23 2	24 25	5 26	27	28 2	29 3	0 31	32	33	34 3	5 36	37	38	39	40	41 4:	2 43	44 4	15 46	5 47	48
39	External supports fit-up & welding at pipe			1			1																				
40	Final machining			1							j	٦ -															
41	Dimensional check			1								—															
42	Pneumatic & helium leak test											ΪC	1														
43	Final cleaning			1	İ			1			Ì								1								1
44	THERMAL SHIELDS			1	ļ	-				••••••								74	i +	+~	7.		<u> </u>		- i -		1
45	Shields 4.5°K preparation (upper)			1	ĺ					•••••••	î	1	1				1	/15	βIL	ιυ	20	יווב	on	dg	dll	1	
46	Dimensional check							Ì				l												T			
47	Shields 4.5°K preparation (lower)																										
48	Dimensional check]																
49	Shields 70°K preparation (upper)									[
50	Dimensional check												<u> </u>								-	7					
51	Shields 70°K preparation (lower)													-													
52	Dimensional check																	<u> </u>									
53	Internal pipes preparation			ļ			·····					·····								•							
54	Superinsulation preparation			ļ ļ	ļļ							·····															
55 56	Other items for assembly preparation																	_									
57	INTERNAL PARTS ASSEMBLY Return pipe, thermal shields & other items assembly																	*					•				
58	Dimensional check			1																							
59	Thermal shields 4.5°K disassembly																				1					-	
60	Internals assembly completion & fixing			1			·····				·····	·····								<u></u>				}			
61	Final checks			1																	LLI į						.+
62	Final cleaning			1																							
63	Preparation for shipment			1	İ	†-	İ			•	i	İ	i						† T		i-			i		İ	÷
64	Delivery c/o Zanon works																-						15/1	0			
	Construction of the m The main components The module compone	s w nts	ill	be /ill	e c	Or	np	ole	te beo	d i	n t o	the	e r	nic	ddl 15	e d	of Oc	Se tc	ept	er	mt			le.			
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GRP/Support Posts/WPMs





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

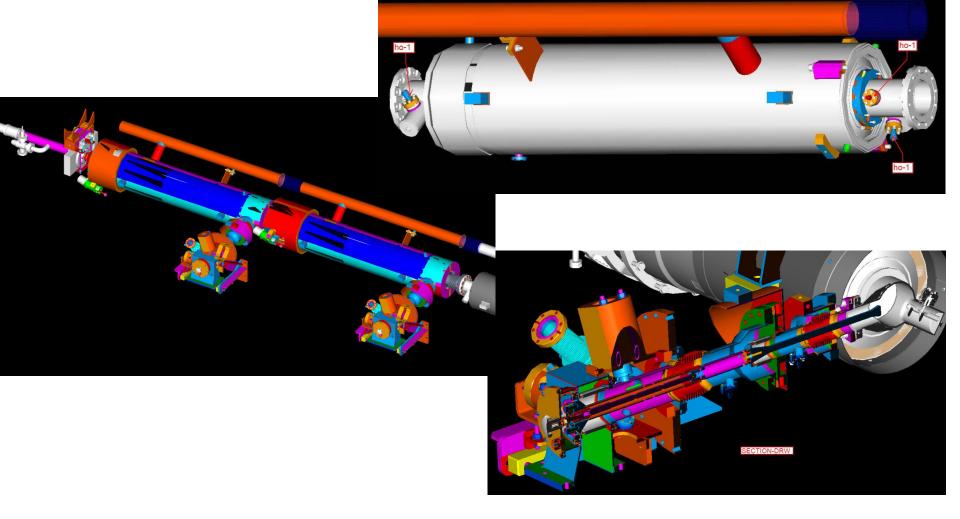
Items	Sub-components	Sub-sub-comp.	Sub-sub-sub-comp.	Responsible Institute	No. ofpos	No. of spares	Remark	Drw.No
Cavity-jacket	Main body			FNAL	2 sets			ca-1
	2K Lhe supply pipe and bellow			FNAL	2 sets		2K Lhe supply pipe is welded to jacket after vertical test	ca-2
	SI			FNAL	2 sets			ca-3
Tuner (Blade-slim)	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		FANL	1 set			in-2
	Diagnostic cable			FNAL	2			in-3
	Thermal intercept			FNAL	2 sets			in-4
		Bolt and nut		FNAL	8set			in-5
			hexagon socket bolt	FNAL	1		M6X35	
			washer-plane	FNAL	1			
		Seals		FNAL	1			in-6
HOM coupler	Main component			FNAL	2set			
		anntenna-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				КЕК	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 10th to 11th 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. ofpos	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 bo	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 value is required.	
	Valve support-ASSY			KEK	1 set			
		support-ASSY		KEK	1 set			ga-1
		C-cramp		KEK	2 set			ga-2
			C-cramp	KEK	1			
			roller	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 18th
 September, and talk about the above items with DESY people.