



SSR Status Update

SSR Team

A Partnership of:

US/DOE

India/DAE

Italy/INFN

UK/STFC-UKRI

France/CEA, CNRS/IN2P3

Poland/WUST

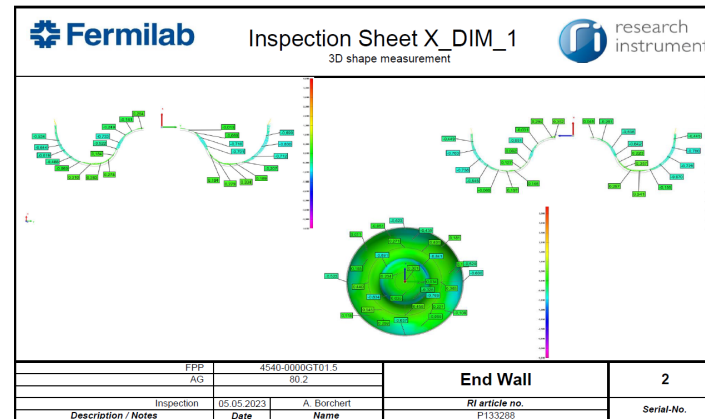


Niobium

- SSR1
 - Awarded second PO for CM2 to Ningxia
- SSR2
 - RFP for Production Niobium. Evaluation completed.

Cavities

- SSR1
 - PO 690591 with Zanon for the fabrication of 9 Production Cavities.
 - MRR done. Working on Welding Book.
- SSR2
 - Fabrication and processing
 - Cavities 001,002 and 003 were tested and limited by FE.
 - Trim tuning of 004, 005 and 006.
 - RI is working on the fabrication of 3 cavities. MRR was performed. First cavity (manufactured and processed) ready in August 2023.



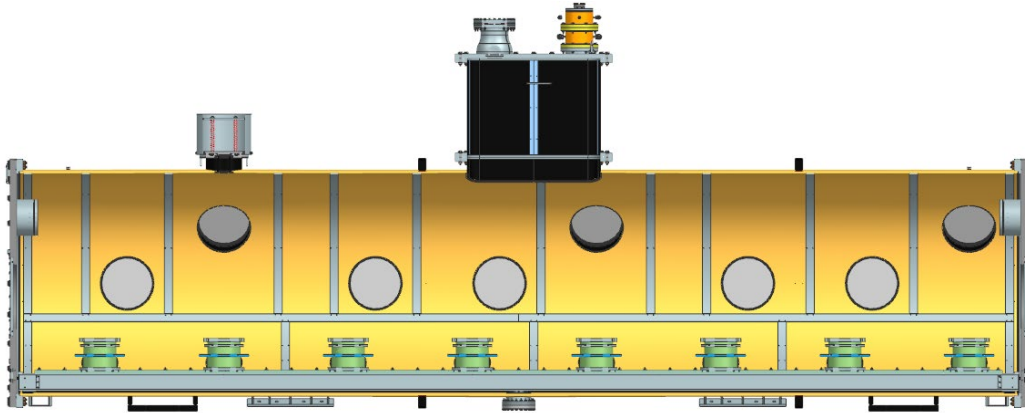
RI completed forming components for 1st cavity



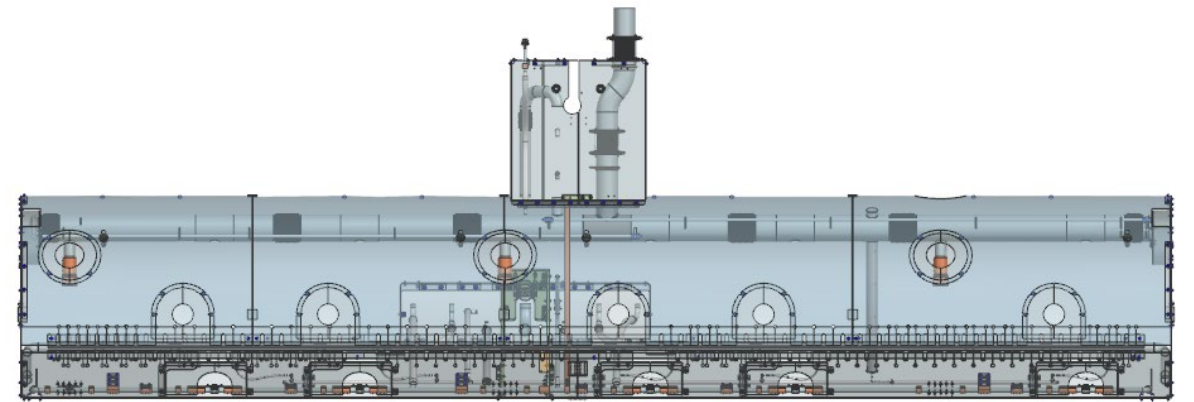
SSR1 Half Spokes Post Forming

SSR2 Pre-production Cryomodule

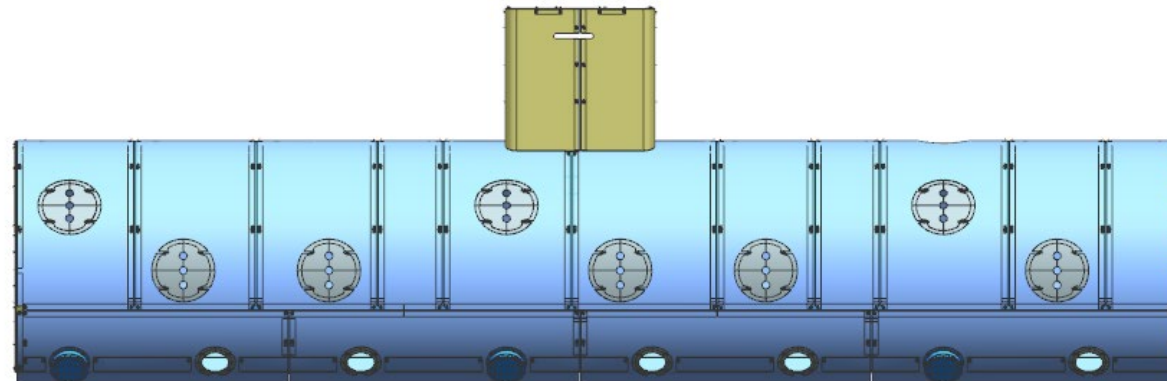
- Main procurements are now in progress and first assemblies will arrive to Fermilab in the next months including the vacuum vessel with strongback and support posts, thermal shield, piping, and magnetic shield.



F10163988
PO # 687044
Manufacturer: Simic
Promised date: 03-27-23



F10177118
PO # 691991
Manufacturer: Wuxi
Promised date: 03-20-23



F10156591
PO # 690358
Manufacturer: Magnetic Shield Corp.
Promised date: 05-01-23

SSR2 Pre-production Cryomodule

- Shipping readiness review was completed, the vessel is being shipped to Fermilab (delivery May 24th).
- Preparing for incoming QC at Fermilab: visual inspection – leak check - demag



SSR2 Pre-production Cryomodule

- Manufacturing of thermal shield is completed: few changes to be implemented by the manufacturer to address non-conformities.
- Manufacturing of piping near completion: few changes to be implemented by the manufacturer to address non-conformities.



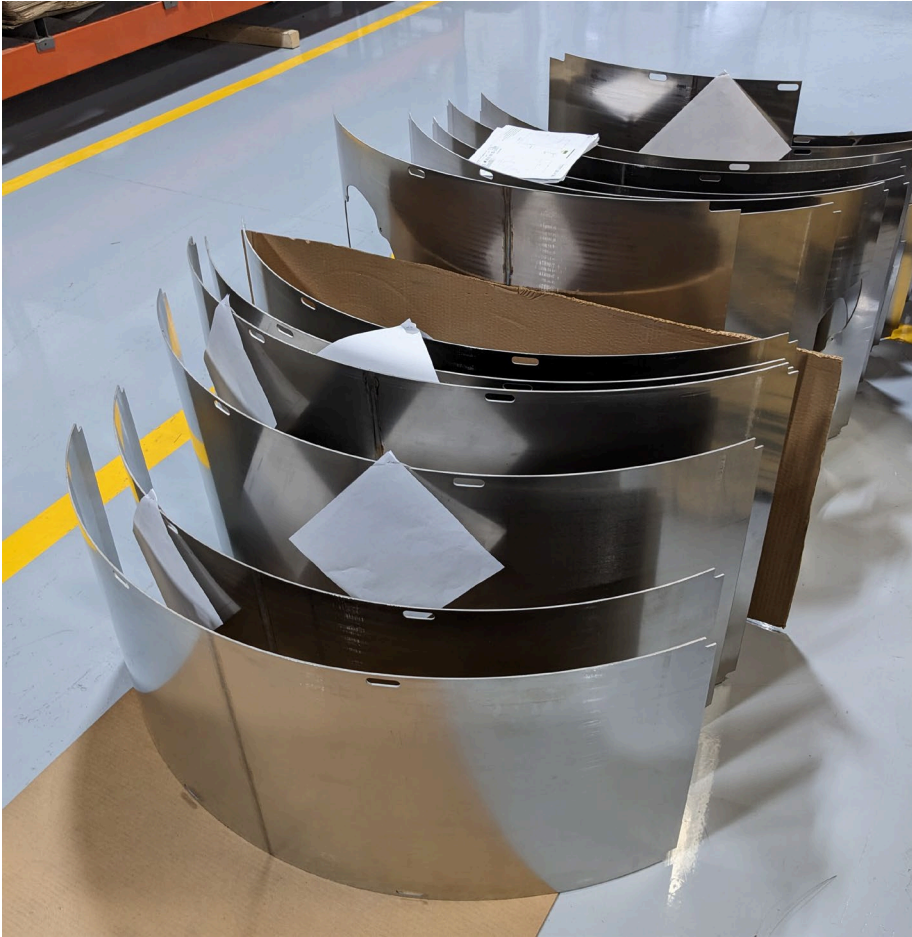
SSR2 Pre-production Cryomodule

- Manufacturing of thermal shield is completed: few changes to be implemented by the manufacturer to address non-conformities.
- Manufacturing of piping near completion: few changes to be implemented by the manufacturer to address non-conformities.



SSR2 Pre-production Cryomodule

- Manufacturing of magnetic shield is completed: shipping readiness review scheduled for 05-18-23.



SSR2 couplers: Procurements

From CPI

- Received missing fasteners for last coupler

From IJCLAB, received

- Two vacuum sides
- Next couplers expected in early June

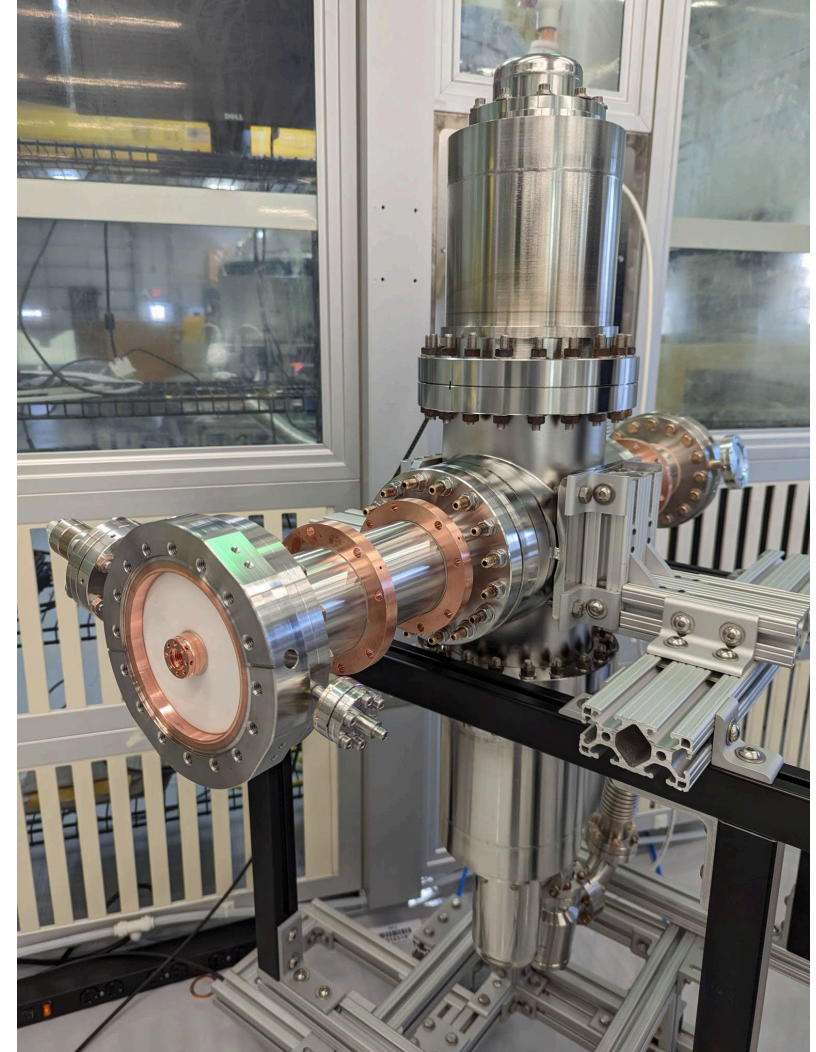
Future / upcoming Procurements

- Coupler Drawing package- releasing this week
- Coupler Spec – releasing this week
- Coupler RFP – Qty 51 Couplers- To start late May / early June
- PRR documentation
- Ceramic RFP closed, meeting with Kyocera to clarify a few items

ppSSR2 Couplers: Recent Testing Summary

March/April

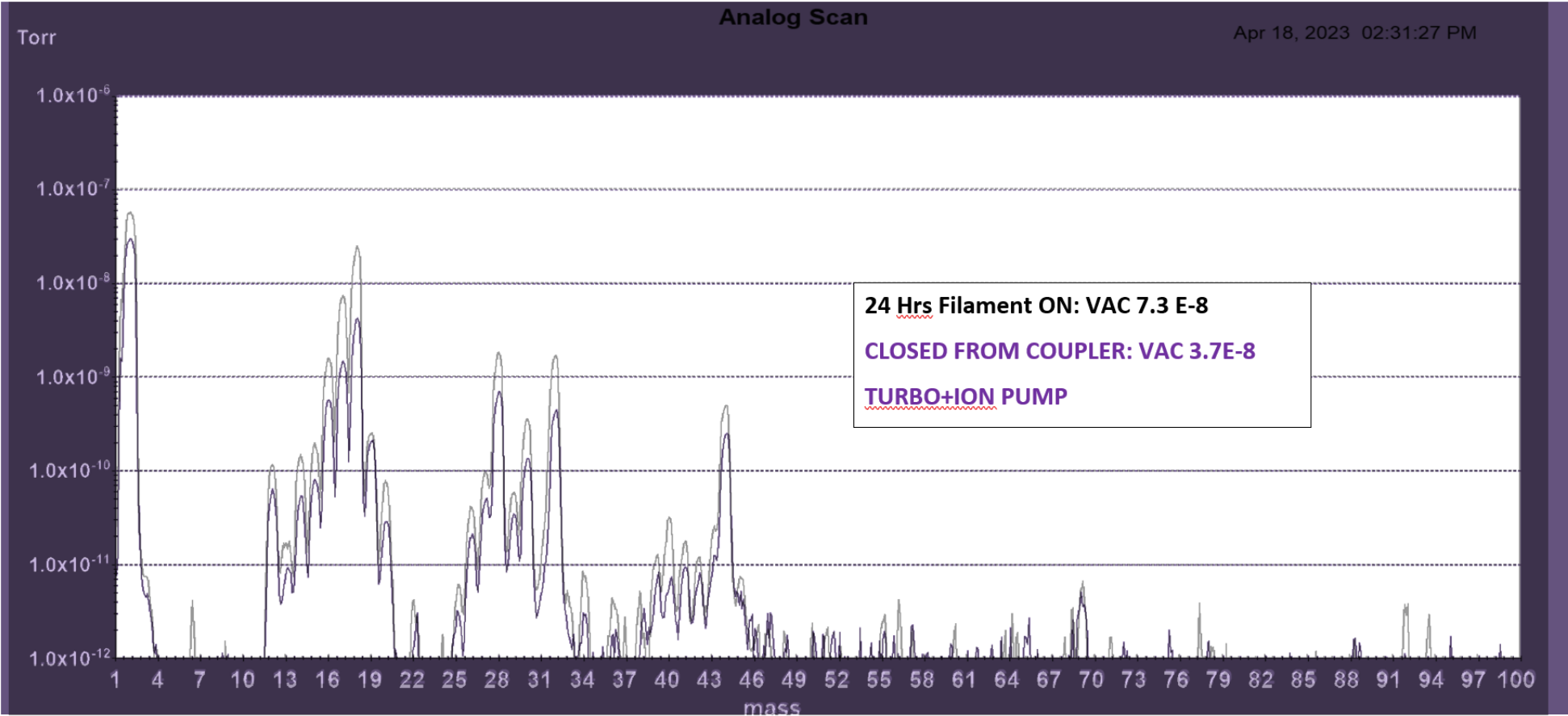
- 1x CPI Coupler, 1x PMB Coupler (Ti-N)
- Testing Completed – no ‘special’ findings



RGA of Couplers

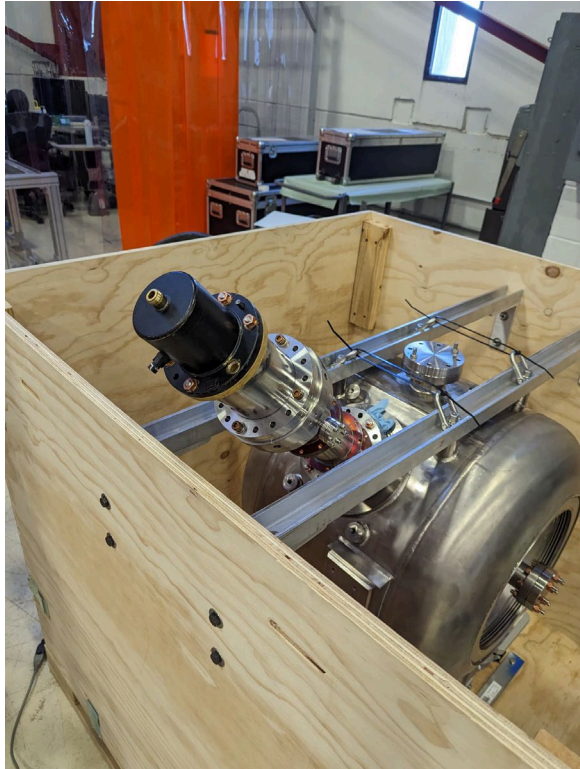
- RGA seems OK post-RF
- Pending: RGA with RF ON and MP active

PIP-II Coupler Test Stand, April 18,



Coupler + Cavity Testing

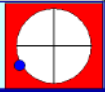
- A new test of Coupler to cavity w/ clean room tooling is set for this week
- At the same time, correct Qext measurements will be taken



Measurements of Bent Coupler

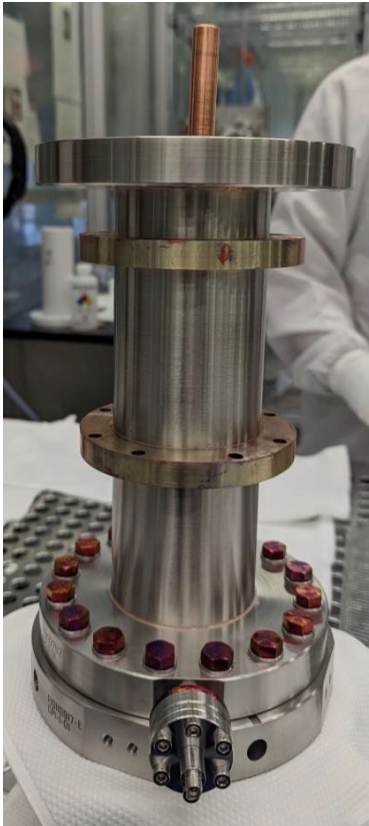
- Bent antenna measured- 6.3 mm offset



Pc	PART NAME : josh sample			April 18, 2023	08:50		
	REV NUMBER :		SER NUMBER :		STATS COUNT : 1		
\oplus	MM	POSITION OF COPPER PIN - CIR1					
AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL	BONUS
X	0.000			-2.735	-2.735		
Y	0.000			-1.530	-1.530		
DF	11.447	0.010	0.010	11.447	0.000	0.000	0.000
TP	RFS	0.010		6.268	6.268	6.258	0.000
Tip off center by 6.26 mm 							
$\opl�$	MM	TOP OF COPPER PIN - PLN2					
AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL	
Z	53.684	0.050	0.050	53.684	0.000	0.000	
\longleftrightarrow	MM	DEPTH OF O RING - PLN2 TO PLN3 (ZAXIS)					
AX	NOMINAL	+TOL	-TOL	MEAS	DEV	OUTTOL	
M	56.071	0.010	0.010	56.071	0.000	0.000	

Nominal 56.5- copper seal not fully crushed- so really it should be within spec of +/-0.3mm.

Recorded distance is from 'average' height of tip, as it is 'tilted'



Quality Control / Inspections / DR's

CPI Couplers

- CPI-1-3+CPI-1-6 (minimum) conflat air side tight fit. Leak checked OK with smaller seals
- CPI-1-5 – threaded holes on small VAC OC flanges
- Air sides – bellows lengths are inconsistent, CPI-1-5 much too short. Need to stretch & re-inspect.
- CPI-1-5 – Rest of air side inspected

IJCLAB Couplers

- IJCLAB Outer Conductors – welds to small flanges seem weak – visible flexing during assembly

