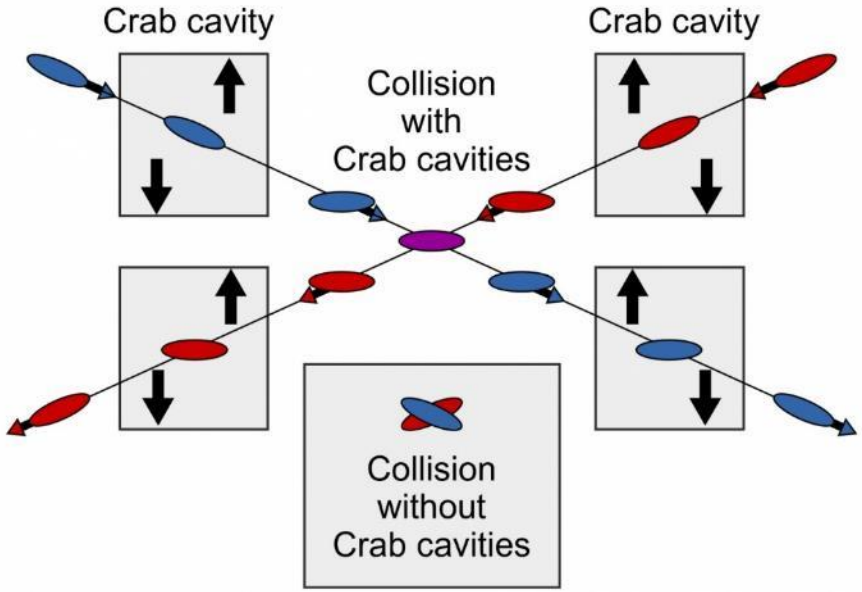
WP3: ILC Crab Cavities

Down-selection Review – Agenda and Charge

Peter McIntosh – ILC WP3 Coordinator

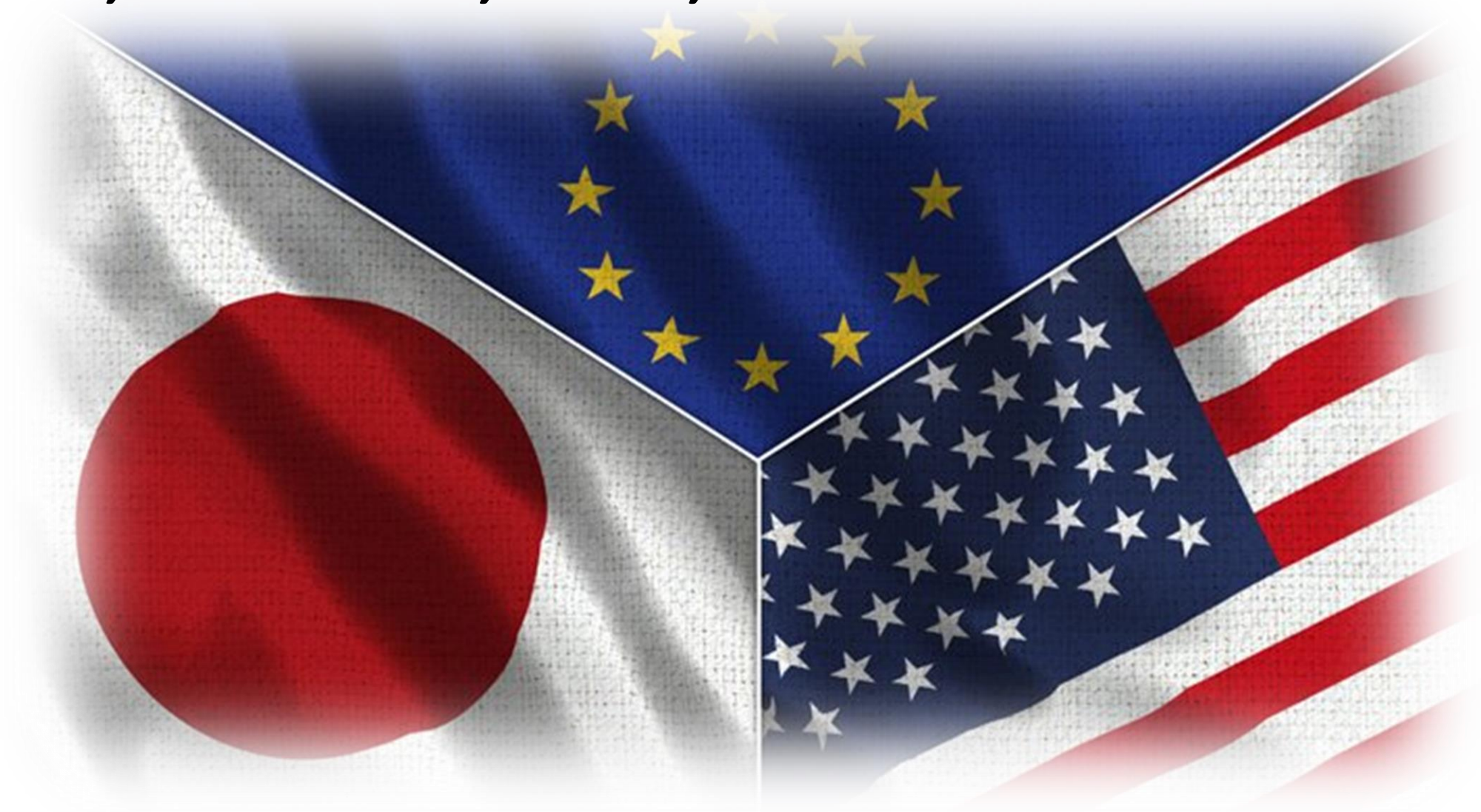
UKRI-STFC Daresbury Laboratory

4th – 6th April 2023



Science and Technology Facilities Council

Welcome Everyone … Many Thanks to the Design Teams, Reviewers, Akira, Kirk and Nobutake-san!



Many thanks to KEK for hosting this important review this week!

Review Agenda Day-1 (Tuesday 4th April 2023)

	Day 1: Tuesday 4th April 2023			
	Start	**Topic**	**Duration**	**Chair - Peter McIntosh**
Panel Closed Session	08:30	Arrival and Refreshments	60-min	Panel closed session
Review Introduction	09:30	Welcome, Logistics and Introductions	15-min	Kirk Yamamoto (ILC WP2)
	09:45	Agenda overview and panel charge	10-min	Peter McIntosh (ILC WP3)
	09:55	IDT Project Introduction	20-min	Akira Yamamoto (ILC IDT)
	10:15	Coffee Break	20-min	
Project Introduction	10:35	ILC BDS and CC Expectations	20-min	Toshiyuki Okugi (ILC BDS)
	10:55	ILC CC Design Specifications	20-min	Peter McIntosh (ILC WP3)
Panel Closed Session	11:15	Panel discussion on requirements	45-min	
	12:00	Lunch	70-min	
Design Team 1	13:10	Racetrack/Elliptical presentation	60-min	Graeme Burt (Lancaster U)
	14:10	Racetrack/Elliptical Open Panel Discussion	45-min	
	14:55	Coffee Break	15-min	
Design Team 2	15:10	Double Quarter Wave (DQW) presentation	60-min	Rama Calaga (CERN)
	16:10	DQW Open Panel Discussion	45-min	
Panel Closed Session	16:55	Panel closed session	65-min	
	18:00	Meeting close		

Review Agenda Day-2 (Wednesday 5th April 2023)

	Day 2: Wednesday 5th April 2023			
	Start	**Topic**	**Duration**	**Chair - Kirk Yamamoto**
	08:30	Arrival and Refreshments	30-min	
Design Team 3	09:00	RF Dipole (RFD) presentation	60-min	Jean Delayen (ODU)
	10:00	RFD Open Panel Discussion	45-min	
	10:45	Coffee break	15-min	
Design Team 4	11:00	Wide Open Waveguide (WOW) presentation	60-min	Binping Xiao (BNL)
	12:00	WOW Open Panel Discussion	45-min	
	12:45	Lunch	60-min	
Design Team 5	13:45	Quasi Waveguide Multi-cell Resonator (QMiR) presentation	60-min	Andrei Lunin (FNAL)
	14:45	QMiR Open Panel Discussion	45-min	
	15:30	Coffee Break	15-min	
Panel Closed Session	15:45	Panel closed session	60-min	
Panel with D/T	16:45	Panel Homework Discussion (with design teams)	45-min	**Format TBC**
	17:30	Meeting Close		
Review Dinner	18:00	Evening dinner		Shunsai Washoku Yoshida Resturant

Review Agenda Day-3 (Thursday 6th April 2023)

Panel Closed with D/T

Tours for Design team members

Panel Closed Session

Panel Closed Session

Panel Decision

Day 3: Thursday 6th April 2023			
Start	**Topic**	**Duration**	**Chair - Akira Yamamoto**
08:30	Arrival and Refreshments	30-min	
09:00	Racetrack/Elliptical Closed Panel Discussion	30-min	Graeme Burt (Lancaster U)
09:30	DQW Closed Panel Discussion	30-min	Rama Calaga (CERN)
10:00	RFD Closed Panel Discussion	30-min	Jean Delayen (ODU)
10:30	Coffee break	30-min	
11:00	WOW Closed Panel Discussion	30-min	Binping Xiao (BNL)
11:30	QMiR Closed Panel Discussion	30-min	Andrei Lunin (FNAL)
12:00	Lunch	70-min	
13:00	Panel closed session	120-min	
15:00	Coffee Break	15-min	
15:15	Panel closeout preparation	75-min	**Review with PM/KY/AY/SM at close**
16:30	Panel decision and recommendations	45-min	Bob Laxdal
17:15	Meeting Close		

Proposed Review Panel Charge (v4a re-ordered 5, 6 & 7)

1. Review the crab cavity (CC) designs proposed, to assess their predicted compliance against the functional specifications for the ILC-250, the upgrade capability to the ILC-500, and the feasibility for higher energy (1TeV).
2. Review the design status of these CC solutions and to identify their risk in comparison to other comparable systems presently in operation or in development elsewhere in the world.
3. Review the proposed CC solutions for their choices of materials, fabrication processes, tuning concepts, power couplers, HOM couplers, SRF performance, etc.
4. Review the plan for the prototype development including possible cooperation (or consortium) with other laboratories and industry.
5. Identify the 2 most appropriate crab cavity designs which can meet the operational requirements for ILC and which can be taken forward to prototype development and high-power validation, in conjunction with its associated HOM coupler components, without helium jacket.
6. Provide suggestions for how best to progress the collaborative crab cavity developments, after the down-selection decision is to be made.
7. Provide appropriate advice for the criteria and further processes to be scoped for the final CC down-selection (post-prototype), aiming towards a unified system design to be integrated with the cryomodule.

Review Ettiquette

- Like to keep the review as informal as possible ….. However

- In order to ensure we have a consistent basis for the review:
  - Design team presenters **MUST** stick to their **60-min** allocation!
  - Presentation slides **should be numbered**, allow discussion referencing.
  - Review panel members **ONLY** ask questions at end of presentations.
  - Any remote connected participants to **ONLY** engage when requested.

Looking forward to a very productive review!

MANY THANKS

Questions?

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