IDEA Study Group News

Paolo Giacomelli INFN Bologna

3rd IDEA Study Group meeting December 17, 2024





- collaborators
 - LASA proposed a new solution for IDEA's solenoid with HTS The solenoid will be designed to reach 3 Tesla and operate at 2
 - **Tesla** at the Z peak
- Had a meeting at CERN with L. Rossi and M. Mentink on November **28th**

 - Interest in collaborating on the solenoid design Next meeting at LASA, Milan, in February 2025



Had a very positive meeting in June with L. Rossi and his LASA



FCC's Expressions of Interest

- Most of you have seen F. Sefkow's recent e-mail on the FCC Eols Detector technologies (sub-detectors)
- - Detector concepts
- These will be used as inputs for the European Strategy Update Have to be presented by the end of January 2025
- We aim at writing an Eol for each of IDEA's sub-detector and also on the detector concept
 - These Eols should be signed by all the collaborators
- List of Eols: <u>https://docs.google.com/spreadsheets/d/1P36xEBj121DKDokJfBZKt1p322U2CIPAottQiBFISSA/edit?gid=0#gid=0</u>
- Merge Eols: https://docs.google.com/spreadsheets/d/1iHTDN1TJpfk_sDrYm7HrY8zuQxfDZj4MtFooziXq5rQ/edit?gid=0#gid=0





Eols for FCC-ee

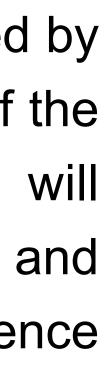
- - Vertex tracker (ID0069)
 - Drift Chamber
 - Outer tracker (ID0094)
 - DR crystal em calorimeter (ID0012)
 - HTS solenoid
 - DR fibre calorimeter (ID0022)
 - Muon detector (ID0076) (ID0084, ID0078)
- And a detector concept Eol on IDEA (ID0100)
- Everyone is invited to participate to and sign these Eols

Baseline, alternative



For IDEA we have thought of these Eols for the detector technologies:

For the time being we have been asked by PED coordination for a "registration" of the sub-detectors EoI, the submission will follow later. Detector concepts Eols and sub-detectors Eols should cross-reference each other. Deadline for submitting Eols: end of January 2025









• For IDEA we also have this other important Eol: Machine Detector Interface (ID0088)

In parallel to the Eols for FCC-ee, we are also progressing on the preparation of an ArXiV document on the IDEA detector concept. sign.



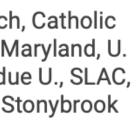
Also for this document we invite everyone interested to participate and



CIRCULAR COLLIDER **EOIS for FCC-ee**

ID0100	Detector concept	The IDEA (Innovative Detector for E+e- Accelerator) detector concept for FCC-ee	Paolo Giacomelli	INFN Bologna	paolo.giacomelli@cern.ch	INFN Bari, INFN Bologna, INFN Catar Ferrara, INFN Genova, INFN Lecce, IN INFN LNL, INFN Milano, INFN Milano Bicocca, INFN Napoli, INFN Padova, Pavia, INFN Perugia, INFN Pisa, INFN INFN Roma3, INFN Torino, INFN Udir Sussex University, University of Zuric BNL, University of Maryland, Lancast University, IP2I Lyon, UC Santa Cruz, Princeton University, Caltech, Purdue University, Baylor University, Argonne National Lab, Brandeis University, Un of Michigan, Oak Ridge National Lab Tech University, University of Virginia IJCLAB, SLAC, Stony Brook University Rutgers University, MIT, CERN
ID0012	Calorimeter	The CalVision Consortium is conducting a R&D on state-of-the-art calorimetry, emphasizing homogeneous calorimetry including dual readout, use of timing analysis, development of new kinds particle flow algorithms, and machine learning techniques.	Bob Hirosky	U. Virginia	hirosky@virginia.edu	ANL, Baylor U. Brandeis U, Caltech, University of America, FNAL, U. Ma Michigan, MIT, Princeton U., Purdue Rutgers U., Texas Technical U., Sto U., U. Virginia
ID0022	Calorimeter	Korea Dual-Readout Calorimeter (DRC) Consortium is doing the following R&Ds: EM & Had Performance, PID (+ML, QML), Absorber type, Beam tests, High Granularity, Time & Position resolutions, Shower 3DReco/profile/depth, fast optical simulation, DAQ R&D	Hwidong Yoo	Yonsei University	hdyoo@cern.ch	Gangneung-Wonju National Univers Kyungpook National University, Uni Seoul, Yonsei University
ID0069	Vertex Detector	Light weight Vertex detector design, mechanical integration and performance	Fabrizio Palla	INFN Pisa	Fabrizio.Palla@cern.ch	Pisa, Perugia, Milano, Padova, Torin Frascati, Bari
ID0076	Muons	Development of micro-RWELL technology for the Muon system	Marco Poli Lener	Laboratori Nazionali di Frascati	marco.polilener@lnf.infn.it	Sez. INFN Bologna, Sez. INFN Ferra INFN Torino
ID0088	Machine Detector Interface	Design of the interaction region, including beam pipes, IR magnets, vertex and lumical integration. Beam induced backgrounds studies and mitigation. Detector integration and maintenance.	Manuela Boscolo	INFN-LNF / Manuela Boscolo	manuela.boscolo@Inf.infn.it	Frascati, Pisa, CERN, BNL, SLAC
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8th FCC Physics week, CERN, 13-17 January 2025: <u>https://</u>

indico.cern.ch/event/1439509/





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Ģ **2025:** <u>https://agenda.infn.it/event/43779/timetable/#20250123</u>



Workshop on FCC-ee and Lepton Colliders, INFN LNF, 22-24 January

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- Ģ **2025:** <u>https://agenda.infn.it/event/43779/timetable/#20250123</u>
- FCC week 2025, Vienna, 19-23 May 2025: https://indico.cern.ch/event/ 1408515/overview



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- Ģ **2025:** <u>https://agenda.infn.it/event/43779/timetable/#20250123</u>
- FCC week 2025, Vienna, 19-23 May 2025: https://indico.cern.ch/event/ 1408515/overview
- Open Symposium of the ESPP, Venice, 23-27 June 2025



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FUTURE CIRCULAR COLLIDER Next meeting

We have the IDEA Study Group meetings on the 3rd Tuesday of every

month





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Next meeting on Tuesday January 21st, 2024 at 16:00 (GVA time)

