

IDEA Study Group News

3rd IDEA Study Group meeting
December 17, 2024

Paolo Giacomelli
INFN Bologna



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

- 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:** <https://docs.google.com/spreadsheets/d/1P36xEBj121DKDokJfBZKt1p322U2CIPAottQiBFISSA/edit?gid=0#gid=0>
- **Merge Eols:** https://docs.google.com/spreadsheets/d/1iHTDN1TJpfk_sDrYm7HrY8zuQxfDZj4MtFooziXq5rQ/edit?gid=0#gid=0

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

- **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**

For the time being we have been asked by PED coordination for a "registration" of the sub-detectors Eol, 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**

Baseline, alternative

- **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.





Also for this document we invite everyone interested to participate and sign.


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 Catania, INFN Ferrara, INFN Genova, INFN Lecce, INFN LNF, INFN LNL, INFN Milano, INFN Milano Bicocca, INFN Napoli, INFN Padova, INFN Pavia, INFN Perugia, INFN Pisa, INFN Roma1, INFN Roma3, INFN Torino, INFN Udine, Sussex University, University of Zurich, FNAL, BNL, University of Maryland, Lancaster University, IP2I Lyon, UC Santa Cruz, Princeton University, Caltech, Purdue University, Baylor University, Argonne National Lab, Brandeis University, University of Michigan, Oak Ridge National Lab, Texas 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, Catholic University of America, FNAL, U. Maryland, U. Michigan, MIT, Princeton U., Purdue U., SLAC, Rutgers U., Texas Technical U., Stonybrook 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 University, Kyungpook National University, University of 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, Torino, Trieste, Frascati, Bari
ID0076	Muons	Development of micro-RWELL technology for the Muon system	Marco Poli Lener	Laboratori Nazionali di Frascati	marco.polilener@Inf.infn.it	Sez. INFN Bologna, Sez. INFN Ferrara, Sez. INFN Torino
ID0088	Machine Detector Interfac	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


 **8th FCC Physics week, CERN, 13-17 January 2025:** [https://
indico.cern.ch/event/1439509/](https://indico.cern.ch/event/1439509/)

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-  **Open Symposium of the ESPP, Venice, 23-27 June 2025**

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