

# Expressions of Interest

# FCC-PED Detector Concepts

update December 09

Felix Sefkow,  
DESY



# A Few Points

**Reminder: Calls**

**Response so far**

**Satellite meeting FCC workshop, January 17**

**Further steps**

# Reminder

## The Calls

Sent out **Calls for Expressions of Interest** on October 11

- one on detector concepts, on on sub-detectors - Eols should refer to each other

**Simultaneously:** opened a **web page** for interested parties to sign up, declaring intent to prepare an EOI

- to foster cooperation between groups and facilitate common Eols
- soft **deadline mid November**

**About 70 Eols received so far**

- proposed some grouping

Satellite **meeting** to FCC Physics Workshop (**Jan 17**)

- short presentations on upcoming Eols

**Deadline Jan 31** for submission to **PED**

- for editorial feedback and inclusion in combined FCC submission summary

**Deadline Mar 31** for submission to **ESU**

- submission of executive summary and attached Eols (optional)

Editorial team:  
Srini Rjagopalan,  
Guy Wilkinson,  
with MD, MAP, FS

# Grouped Eols

[https://docs.google.com/spreadsheets/d/1iHTDN1TJpfk\\_sDrYm7HrY8zuQxfDZj4MtFooziXq5rQ/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1iHTDN1TJpfk_sDrYm7HrY8zuQxfDZj4MtFooziXq5rQ/edit?usp=sharing)

	A	B	C	D	E	F	G
17			<b>SiPM-on-Tile HCAL</b>				
18	<b>D0032</b>	Calorimeter	<b>Development of the SiPM-on-Tile Analog Hadron Calorimeter (AHCAL) technology: detector geometry, readout and trigger concept and electronics, mechanical and thermal integration, photon sensors, scintillators, simulation and reconstruction.</b>	Frank Simon	KIT	frank.simon@kit.edu	DESY, U Hamburg, U Heidelberg, KIT, U Mainz, UT Arlington, NIU, FZU Prague
19			<b>SiW ECAL</b>				
20	<b>D0039</b>	Calorimeter	<b>SiW-ECAL : a silicon-tungsten highly granular electromagnetic calorimeter suitable for particle flow-based detector concepts at a Higgs/ElectroWeak/Top factory.</b>	Vincent Boudry	LLR – LLR, CNRS, École polytechnique, Insti	Vincent.Boudry@in2p3.fr	IJCLab (Orsay), LLR (Palaiseau), LPNHE (Paris), Omega (Palaiseau), DMLab, IFIC (Valencia), CERN, U. Tokyo, KEK, iThemba labs (Cape Town)
21	<b>D0074</b>	Calorimeter	<b>Building on the experience / contribution to CMS and CMS Upgrades - and in particular HGCALE and design studies, high throughput digital electronics and algorithms. Most of the potential effort is currently focused on completing the latter.</b>	Anne-Marie Magnan	Imperial College London	a.magnan@imperial.ac.uk	TBD
22			<b>MAPS ECAL</b>				
23	<b>D0059</b>	Calorimeter	<b>Development of MAPs for Si-tungsten calorimeter.</b>	Alexander Paramonov	Argonne National Laboratory	aparamonov@anl.gov	ANL
24			<b>Tile fibre HCAL</b>				
25	<b>D0086</b>	Calorimeter	<b>The ALLEGRO HCAL is a concept of a scintillating tile hadronic calorimeter for the central region, designed to provide a high-performance, high granularity and cost-effective solution for FCC-ee.</b>	Henric Wilkens	CERN	Henric.Wilkens@cern.ch	LIP, CERN, ITIM Cluj, IFIC Valencia, Univ. of Be
26			<b>LumiCal</b>				
27		Lumical	<b>Development of Lumical</b>	Mogens Dam			
28			<b>Carbon fibre wire chamber</b>				
29	<b>D0013</b>	Main Tracker and Envelopes	<b>Interested and working towards detector concept based on a novel wire chamber concept employing carbon fiber wires for the Outer tracking device of FCC-ee. Open for additional collaborators.</b>	Andy Jung	Purdue University	andreas.werner.jung@cern.ch	Purdue University
30			<b>Straw-tube tracker</b>				
31	<b>D0015</b>	Main Tracker and Envelopes	<b>Straw-tube tracker design and tracker design optimization</b>	Oliver Kortner	Max-Planck Institute for Physics	Oliver.Kortner@cern.ch	University of Michigan, Ann Arbor
32							
33	<b>D0062</b>	Main Tracker and Envelopes	<b>R&amp;D for straw tracker electronics/readout</b>	Anyes Taffard	UC Irvine	ataffard@uci.edu	UM, MSU, UMass, Harvard, Duke, UT Austin, MPI
34	<b>D0038</b>	Main Tracker and Envelopes	<b>Development of a thin-wall straw tracker for FCC-ee inner tracking system. Combined with the pixel detector and silicon wrapper, it will provide excellent momentum resolution and PID capability over a wide momentum range</b>	Junjie Zhu	University of Michigan	junjie@umich.edu	MPI, UMass, Harvard, Tufts, MSU, UC Irvine, Duke, UT Austin

# Satellite Meeting, Following FCC workshop at CERN

Friday January 17, 0900-1300

## Ask each Eol group to present

- sounds challenging - but worked well at US FCC, MIT

## Encourage groups to merge

- ideally merge Eol documents
- can also combine presentation only
- merged Eols get more time

## Prepared template

- distribute in the next days

<ID No> <Your Technology Title>

Contact Persons:

- Name 1, email
- Name 2, email
- Name 3, email

Collaborating Institutes & expertise/facilities:

- Institute 1
  - Expertise 1, facility 1
- Institute 2
  - Expertise 2, facility 2
- Institute 3
  - Expertise 3, facility 3

Connections with DRDs:

- DRDa, WPx: ...
- DRDb, WPy: ...

Connections with Concept Groups:

- Engineering/Simulation studies with concept NN

References: [1]: A detailed write up of technology A, NIM-A, vv, pppp, 2024; [2]: A detailed write up of technology B, JINST, vv, ii, 2021; [3]: Our Eol draft in overleaf <link>

<ID No> <Your Technology Title>

Planned activities for the next 3-5 years

Eye candy, prototype results, ...

- 2025: Task 1
- 2026: Task 2
- 2027: Task 3

<For each merged Eol you may add one extra slide. >

# Back-up