

Minutes of the UK Tracker R&D Catchup of 2023/05/25

Present:

Birmingham	Andy Chisholm, Karol Krizka, Laura Gonella, Phil Allport
Bristol	Joel Goldstein
Brunel	Liliana Teodorescu
Cambridge	-
Edinburgh	Yanyan Gao
Glasgow	-
Imperial	-
Lancaster	Lingxin Meng
Liverpool	Eva Vilella Figueras, Helen Hayward, Tim Greenshaw, Tim Jones
Manchester	Alexander Oh, Cinzia da Via, Conor Fitzpatrick, Elena Gramellini, Francisca Muñoz Sanchez, Jo Pater, Jon Taylor, Marco Gersabeck, Oscar Augusto
Oxford	Daniel Hynds, Richard Plackett
QMUL	Ian Dawson, Seth Zenz
RAL Daresbury	Roy Lemmon
RAL PPD	Ben Smart, Jens Dopke
RAL TD	Iain Sedgwick, Marcus French, Soniya Mathew
Sheffield	Paul Kemp-Russel, Trevor Vickey
UCL	Andreas Korn
Warwick	Karolos Potamianos

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Apologies:

Cambridge	Bart Hommels, Sarah Williams
Oxford	Daniela Bortoletto

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5 Agenda and slides at <https://indico.stfc.ac.uk/event/782/>

6 1 Introduction

7 Jens gives a short set of introduction slides, describing the context for this meeting.
 8 The aim is to put together a UK funding bid on particle physics instrumentation, fol-
 9 lowing the ECFA R&D roadmapping exercise. Participants are encouraged to sign up
 10 to a new e-group where information will be circulated:

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12 <https://e-groups.cern.ch/e-groups/Egroup.do?egroupId=10563618>

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14 The funding envelope is expected to be of order £5M p.a., split across all detector
 15 technologies, with an expected (hoped for) ramp-up in the next financial year.

16 Phil points out that there is a Forum on Tracking Mechanics workshop at the end
 17 of the month, where a push for a separate DRD may be decided upon. He also adds
 18 that a ramp-up beyond the £5M p.a. may be anticipated as the high luminosity LHC
 19 upgrades wind down. At the steering committee meeting earlier this week the £5M
 20 p.a. was considered reasonable in the short term, with an expectation that this would
 21 further increase.

22 Conor asks about the interplay with the other DRDs, and whether this meeting
23 relates to more than just solid-state detectors. It is pointed out that the DRD3-DRD7
24 interplay is probably the largest overlap for this community, and this is not meant to be
25 an all-encompassing discussion. The Sol which should be submitted to science board
26 is a single proposal covering all UK instrumentation R&D. It is suggested to continue
27 this discussion after the remaining talks, when this will become clear.

28 **2 DRD3 - International Context**

29 Eva gives a short set of slides describing the current state of DRD3. The full DRD
30 proposal is expected to be submitted in Q3 2023, followed by formal CERN approval
31 in Q4 and official start at the beginning of 2024. The DRD3 working groups are
32 presented, along with links to the workshop held earlier this year at CERN. A second
33 questionnaire will be distributed next month, along with the draft DRD3 proposal for
34 feedback.

35 **3 DRD7 - International Context**

36 Iain gives a short set of slides describing the current state of DRD7, with some focus
37 on DRD7.6 (monolithic CMOS). He gives a summary of the meeting on March 15th
38 this year, where the active regions and focus of the DRD were laid out. DRD7.6 plans
39 to focus on common access to foundries, common IP blocks and 3D interconnection.
40 The interplay with DRD3 is highlighted, which should cover novel processes and proof-
41 of-principle, as opposed to design flows, technology access and generic IP blocks.

42 **4 Outcome of Future UK Silicon Vertex & Tracker 43 R&D Workshop (Birmingham Workshop)**

44 Laura gives a short set of slides summarising the workshop held in Birmingham last
45 year. There is a complete summary of the discussions attached to the agenda. A brief
46 version is that the community wanted to work towards a large end-to-end demonstrator
47 for a future accelerator, in around 10 years time. The R&D for this was initially aimed
48 towards lepton colliders, but it was recognised that technologies aimed at high radiation
49 environments should also be investigated. This should also help to support technologies
50 which can later be branched off to project-specific funding.

51 **5 Proposed structure and where to go from here**

52 Daniel gives a short set of slides describing the start of the working group structure, as
53 set out in Birmingham, along with some of the milestones currently attached to this.
54 The structure broadly maps on to the DRD3 structure, with some topics falling under
55 DRD7 or a little separate (mechanics and a tracker demonstrator).

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57 **A request is made for volunteers to help flesh out the milestones in ad-
58 vance of the Liverpool meeting, in particular to add resource estimates so
59 that we can decide how much we can do within the expected funding en-
60 velope. Interested people should send a mail to Jens, Laura, Daniel or Eva.**

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62 The hope is that Liverpool will really set out the proposal and what we want to
63 cover, guided by input from the groups on what they want to do and a rough costing
64 to see what we can afford. The Sol should go to science board in September, followed
65 by the PPRP proposal in November.

66 Jens points out that there have already been discussions with other DRDs where
67 there is overlap. He also adds that the DRD3 resource estimates so far add up to
68 around 35 FTE and £1M in resources. Many of these are already funded on upgrade
69 projects and overlap with DRD activities.

70 6 AOB

71 Eva adds that the agenda for Liverpool is being prepared and will be circulated as soon
72 as possible, but it is expected to start after lunch on Monday 26 and finish on Tuesday
73 afternoon. It will be held on the university campus. An initial agenda can be found at:

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75 <https://indico.stfc.ac.uk/event/781>

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77 **People are encouraged to register as soon as they are able, and to note**
78 **that the timetable is preliminary and will be shuffled around.**