

Minutes of the UK instrumentation bid CDT discussion 2023/06/02

Present:

Birmingham	Cristina Lazzeroni, Phil Allport
Brunel	Akram Khan
Glasgow	Richard Bates
Oxford	Daniel Hynds, Daniela Bortoletto
RAL PPD	Dave Newbold
Warwick	Yorck Ramachers

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4 Agenda and slides at <https://indico.cern.ch/event/1293167>

5 1 Discussion

6 Cristina has a few slides just summarising experience of ITNs, CDTs and MPAGS.
7 MPAGS seems to be broadly similar to SUPA and similar initiatives, covering several
8 universities in distinct geographic areas.

9 Cristina wants to understand the framework and what a CDT bid is supposed to
10 cover. Is the CDT intended to get PhD manpower specifically.

11 Daniela goes through the UK instrumentation bid, and that there will be a coordi-
12 nated project bid with an SOI submitted later this year. This will not come under the
13 infrastructure fund umbrella, as this was considered not to be infrastructure.

14 Richard asks if there are two separate bids, the R&D bid and a CDT bid. Dave
15 imagines this as a single SOI, covering both of these plus an industry engagement fund.
16 The feedback from science board will then determine the next steps in terms of what
17 comes forward.

18 Daniela highlights that the number of studentships that come to Oxford from STFC
19 is rather small, which makes it difficult to place students on R&D. Cristina agrees that
20 instrumentation is not really covered at present and that there is a need for this in
21 the community. It is unclear whether this is a response to a funding call, which Dave
22 points out don't really exist any more.

23 Phil asks if it could be feasible for a cohort of students to begin next October
24 (2024). In this case we would need a green light to prepare a CDT bid possibly in
25 advance of an SOI ruling. There is not a clear route for funding to appear at present,
26 so there is some uncertainty involved. There may be some to and fro between what
27 we want to do and what programmes decides to open. We seem to be a little chicken
28 and egg.

29 It is suggested that SUPA is not a model to follow; a CDT is a top-down way to
30 add students and include industry. Cristina sent around details of EPSRC CDTs, where
31 20% of the funding needs to be provided via industrial engagement. This could be a
32 model to follow for setting up a CDT on instrumentation for particle physics. Dave
33 recommends talking with UCL and Bristol, who have used this model to get funding
34 through STFC. Daniela is worried that these were in data science and were much easier
35 to get interested industries. Dave points out that electronics and cryogenics have quite
36 a community that could be interested, while Phil adds that there are routes via medical
37 applications, rather than just a particle physics focus.

38 Daniel asks for clarification on whether students should be included in the main
39 instrumentation bid. Given the lack of trained instrumentation physicists the DRD3
40 community had assumed a large part of the programme would be covered by PhD
41 students. Dave would assume that if students are involved in the bid then they should
42 be attached to the CDT. It is unclear whether projects are decided upon by the CDT or
43 by the separate DRD communities. Cristina points out that how these have operated
44 in the past is that the CDT acts as a quality control to provide better training. In
45 Birmingham there are calls every year for new projects; Dave points out that this would
46 go via the steering committee.

47 Richard describes how an imaging CDT is done. Daniel asks about how the projects
48 would be passed to the CDTs and whether these are free-for-all or directly coming from
49 the technical board/DRD working groups. Dave is suggesting numbers of around 50
50 students, either per annum or in a cohort. Skills development is a large part of STFC's
51 remit, and is not currently focussing on postgraduate students. Dave would estimate
52 £2M a year would pay for 10s of students + admin costs. This would make the main
53 bid £1-1.5M a year for students, £3M a year for postdocs. There have recently been
54 300 apprentices taken on by STFC, and one should highlight this when looking at who
55 will design detectors for the future. Johanna Hart at UK space was the person that
56 originally set up the skills factory at STFC, which should have included postgraduate
57 students but was cut back. There is an imminent spending review which might revise
58 this.

59 On costing there is a question about teaching and if this is provided by universities
60 for free. There is also a question about how the teaching workload is distributed.

61 Dave adds that we will need to communicate what the benefits of a CDT are
62 to STFC. Daniela asks specifically why we should go for CDTs rather than providing
63 funding to DTGs. This seems to be related to funding and how studentships are ring-
64 fenced. Phil points out that we have a deficit of students with respect to what could
65 be taken. Everyone agrees that more work will need to be put into recruitment, and
66 we already struggle to fill open places.

67 Daniel asks practically speaking how to proceed, and proposes asking each of the
68 DRDs what they need in terms of PhD students, and what requirements they have in
69 terms of lectures, hands-on training, etc. There is broad agreement that this is where
70 it needs to come from. The DRDs should come back with numbers about how many
71 students, and a little bit of time profile. Cristina asks if they could also provide some
72 examples of projects that they would like to run. Phil adds that the way that the
73 UK proposal is coming together there may be cross-DRD projects. Daniel adds that
74 the type of training needed should be brought up. He additionally asks whether this
75 group wants to cover training beyond postgraduate level. Administrative support for
76 workshops could also be covered by the CDT, but it is unclear the extent to which
77 that sits within the scope. Common administrative funding may need to be covered
78 in the UK instrumentation bid but not explicitly part of the CDT. Dave imagines that
79 the administration will not be common, and that there should be more professional
80 administrators organising the CDT.

81 Richard summarises that we will have an SOI, with a section entitled CDT that
82 will comment that it intends to cater for a number of students set by the DRDs.

83 Yorck asks about the timeline, and whether October 2025 is when we should plan
84 for a first cohort. Phil worries that it could take even longer for science board to
85 come to a conclusion. Dave hopes that a decision on a CDT could be forthcoming by
86 March, for a cohort start in 2024. This would require us to be very prepared. Daniela
87 and Phil point out that for hiring good students this might be impossible given typical

88 application deadlines in January, and 2025 is more realistic. Students are required by
89 STFC to commit to projects by April in general. Yorck highlights that we will need time
90 to advertise and establish a pool of students, where we currently struggle to achieve
91 candidates interested in instrumentation.

92 2 Summary points

- 93 • It is suggested to establish a CDT in support of the UK instrumentation bid
- 94 • The volume of students and programme of training should be dictated by the
95 individual research areas in the bid
- 96 • The CDT would handle recruitment of the students and support the training
97 provided by each research area
- 98 • Student projects would be provided by the individual research areas in the in-
99 strumentation bid
- 100 • A paragraph or two will need to be provided for the SOI to science board in
101 September, outlining the CDT
- 102 • Given this timescale, an initial cohort of students is not expected before October
103 2025

104 3 Open questions

- 105 • Does funding for a CDT come out of a separate pot from the main instrumen-
106 tation bid? What impact does this have on the total funding envelope for the
107 programme, if a large part is envisioned to be carried out by students?
- 108 • Is there anything that can be done to bring the start date forward to October
109 2024? Even a limited first cohort would be advantageous
- 110 • What should be the level of industrial engagement for the CDT? In what way
111 should this be separate from industrial engagement within the individual research
112 areas?

113 4 Action points

- 114 • Contact the convenors/technical board of the instrumentation bid to ask for
115 numbers and time profile of PhD students, along with training requirements
- 116 • Understand the funding route for the CDT, and what requirements there are
117 (particularly on industrial support)