

DRDT 7.5

Introduction

Workshop plans

Current Survey Trends

UK involvement

DRDT 7.5: Emerging Technologies

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Round table on UK in DRD7



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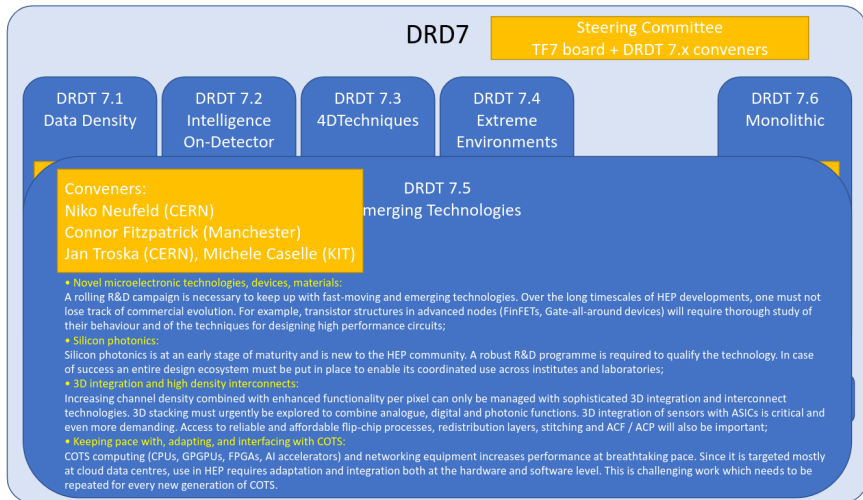
**UK Research
and Innovation**

C. Fitzpatrick

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DRDT 7.5: Emerging Technologies



► Quite a broad remit. Covers advances in silicon, interconnects, and future COTS

- ▶ Because of the broad and more forward looking remit, ground-up approach to identifying common interests:
- ▶ Survey <https://forms.gle/prNxzmAWL9UDJUkk8> circulated to attendees and by theme convenors as widely as possible
 - ▶ Aim is to identify not just themes but potential collaborations: Survey captures email addresses.
 - ▶ A few UK responses, but more would help
 - ▶ Still time to add your input. Please do!
- ▶ Workshop session will consist of an introduction on the DRD 7.5 areas followed by a summary of the survey responses.
- ▶ Discussion session after this will try to connect responses to potential collaborations

- ▶ Presently 23 responses
- ▶ While low statistics a few broad areas of interest are taking shape:
 - ▶ R&D into 28nm CMOS (and FINFET at 16nm or lower), for ASIC suitability, esp. including timing information
 - ▶ Direct wafer bonding for 3D devices
 - ▶ Radiation + Cryogenic hardness studies of silicon photonic devices
 - ▶ 3D microelectronic circuits and combined sensor/readout chip feasibility
 - ▶ COTS: Definite trend away from CPU to R&D into GPU, FPGA, SOC for off detector processing
- ▶ These topics are relatively standalone- not so surprising given the broad nature of the theme.

- ▶ Personal opinion:
 - ▶ There is a lot of overlap within DRD7, and between DRD7 and the other DRDs
 - ▶ A DRD7.5 consortium might work if it is forward thinking and ambitious
 - ▶ The UK has quite a bit of experience in the COTS subtheme relating to FPGA and more generally COTS TDAQ processing.
 - ▶ Is this an area we might rally behind?
- ▶ There is still time to provide input (either by survey or contacting me directly).
- ▶ A coherent message from several UK institutes would be nice to highlight as a potential area for collaboration.