

SILICON  
DEVELOPMENTS  
IN THE  
UK

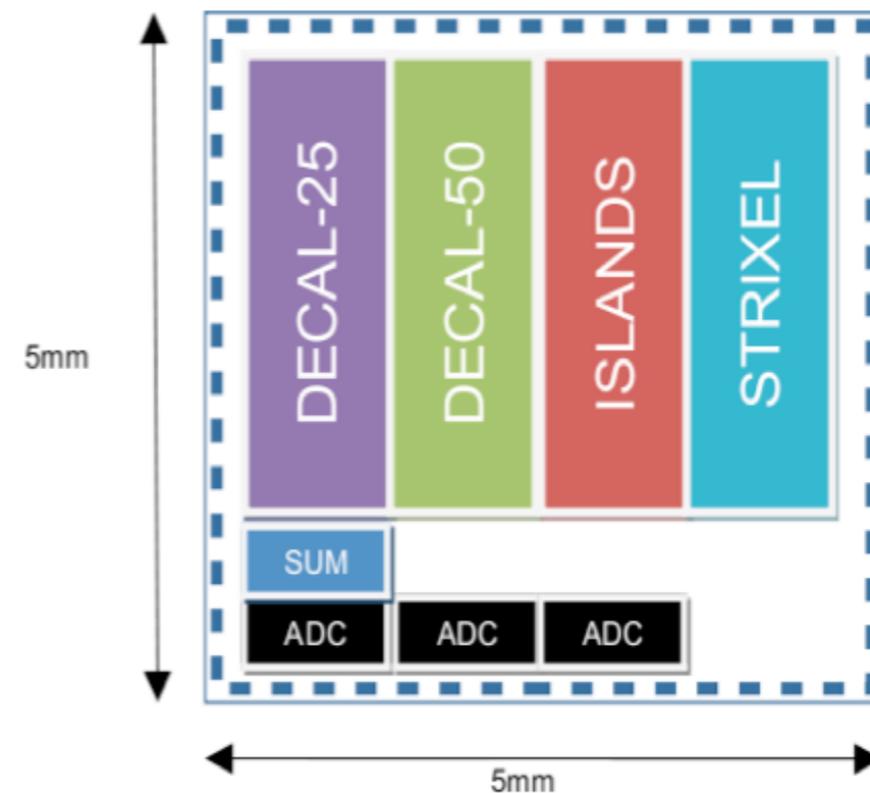
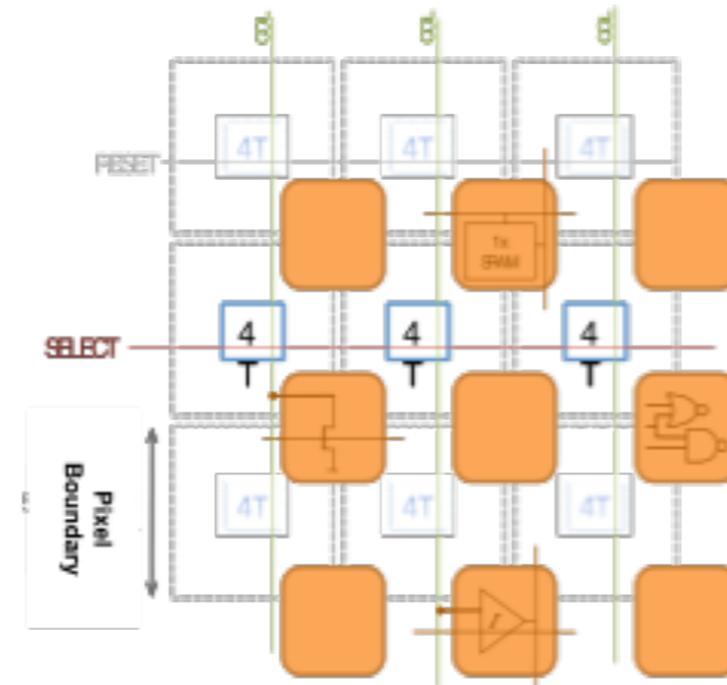
Joel Goldstein  
SiD Consortium Meeting  
January 2015

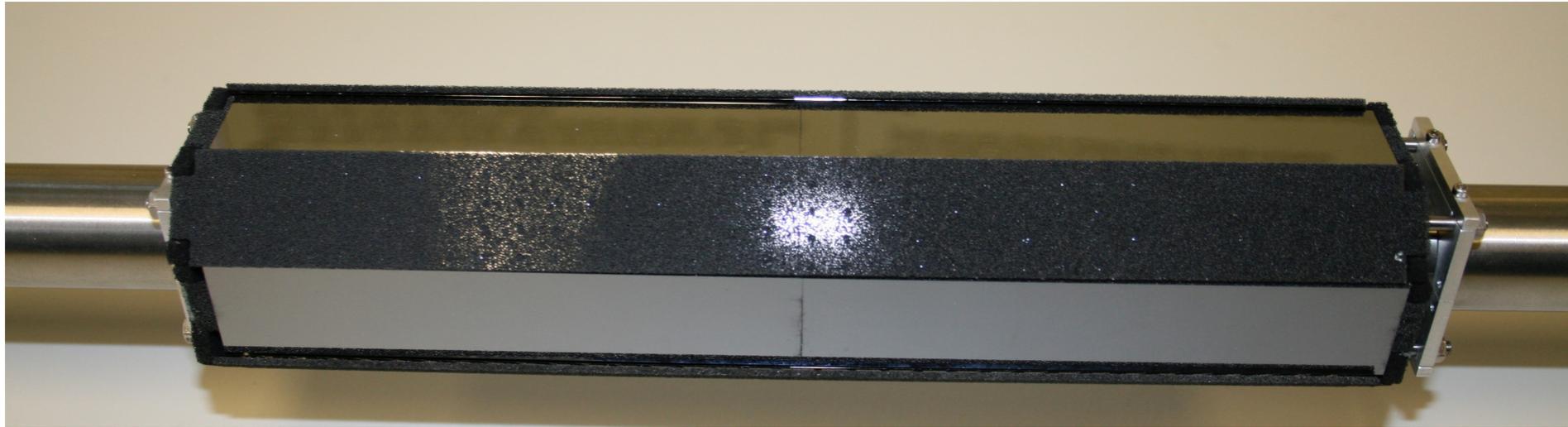
# History

- \* UK had well-funded ILC R&D projects 2000-2008
  - \* Vertex detector in LCFI
  - \* Calorimeter with CALICE
  - \* Accelerator and beam delivery
- \* All ILC support official withdrawn in 2008
- \* “Generic” detector R&D activities continued ~2010
  - \* Lightweight mechanics in LowMass
  - \* MAPS in SPiDeR
  - \* DAQ via EU frameworks

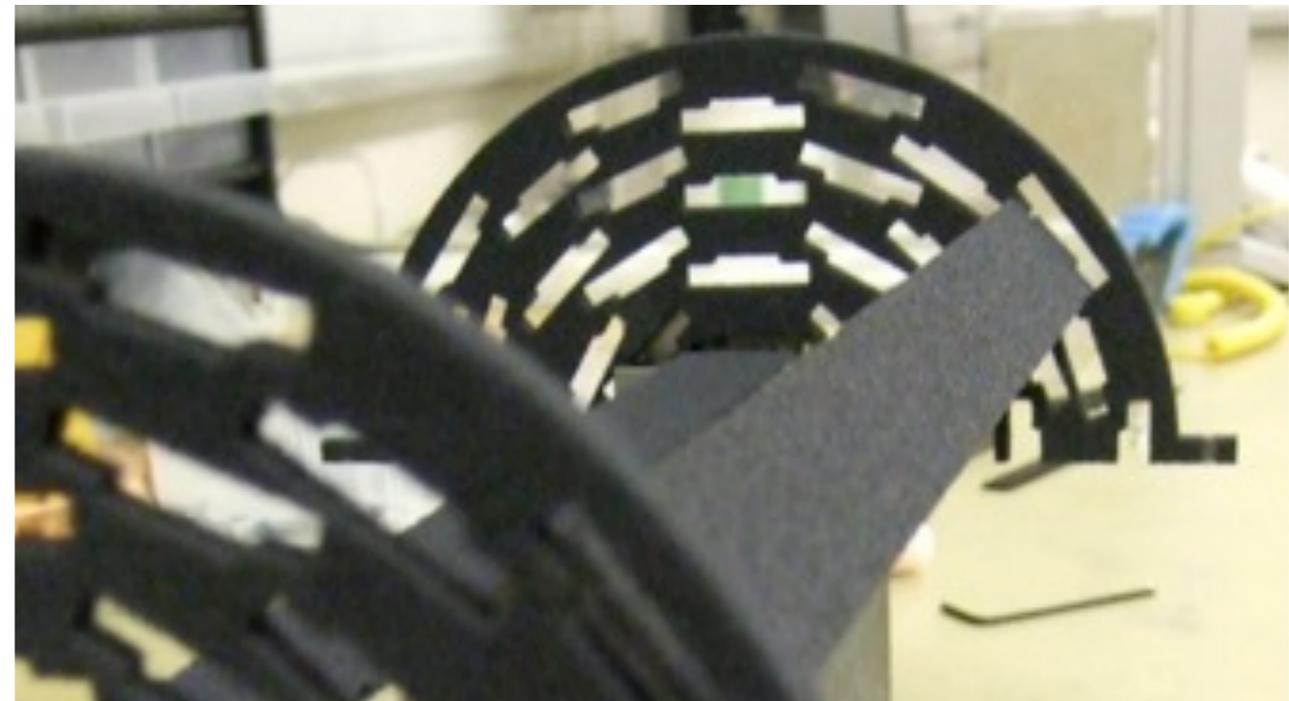
# MAPS

- \* Cherwell
- \* 4T pixel architecture
- \* Deep p-well
- \* Digital calorimetry
- \* Tracking
- \* 2 generations now tested





- \* Ultra low-mass structures
- \* Ceramic foams
- \* Long barrel VXD L2 mock up
- \* Bulkheads prototyped



# Recent History

- \* Work has continued at some level....
  - \* MAPS for HEP (Arachnid)
  - \* CMOS for HEP (Atlas upgrade)
  - \* MAPS for other applications (fast imaging, X-rays...)
  - \* Mechanics for LC (PLUME)
  - \* DAQ via AIDA
  - \* Silicon Pixel Tracker (CJD/KS)
- \* Gradual change in political climate
  - \* Higgs boson discovery...

# 2014 Proposal

- \* Formal proposal to STFC
- \* ILC-specific programme
- \* Concept-neutral
- \* 19 UK institutes
- \* Approximately \$0.5M over two years
  - \* Additional support from within institute grants
- \* Mainly travel
- \* Get the UK back in the game

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- \* **Approved** at “core” level of funding

# Silicon Activity

- \* Focused on design study for pixel tracking
  - \* Central and/or forward
  - \* Evaluate potential sensor technologies
  - \* Simulations of potential dedicated pixel architectures
  - \* Develop and evaluate conceptual designs including realistic material budgets including support and services
- \* Specific resources not awarded
- \* Most effort available through university grants

# Outlook

- \* Pixel tracker activity in UK just starting
- \* Two years of funding at low-level
- \* Officially concept-neutral
- \* Need to discuss with international collaborators...