

GPUs for real-time applications

Special interest group

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GPUs for real-time applications

Apologies for absence

- ❑ Currently at a last minute meeting with Workstations Specialists, a Derby-based company that provides bespoke high-performance computer systems.
- ❑ Discussing various options for the implementation of a real-time digital signal processing system, including GPUs, FPGAs, and custom radio astronomy equipment.

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Why make a specialist group?

- ❑ We're designing a proof-of-concept Passive Millimetre Wave Imagers (**PMMWI**) for security screening which will acquire and process large volumes (multi Gbps) of data in real-time in a PC.
- ❑ Wanted to form a network of individuals and groups within the University working on PC (GPU) based real-time data acquisition and processing developments.
- ❑ Complement the GPU Club by devoting time to real-time applications and the unique challenges they pose.

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Summary of first meeting - Presentation

- ❑ Presentation on our current work on PMMWI and requirements for future demonstrators.
- ❑ Outline of a possible solution by using GPUs to process the data in real-time, to be tested with a low-cost proof-of-concept system.
- ❑ Advancements in this field would link to other areas, such as the development of next-generation radio interferometers like the Manchester University Student Telescope (MUST).

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Summary of first meeting

- ❑ Discussion of facilities and personnel available to help with real-time GPU development.
- ❑ Discussion of the future of GPUs, including driving factors for the market and possible directions for it to take.
- ❑ Main problems for real-time GPU use are:
 - ❑ Potential I/O bottlenecks,
 - ❑ Uncertainty on the future direction of GPU and associated I/O development.