TA5 FPGA @PUNCH2.0?

10.02.2025

PUNCH 2.0

- PUNCH 2.0 will focus on services: Compute4PUNCH, Storage4PUNCH
  - Federated Infrastructures
  - Data Management
  - Science Data Platform and Dynamic Research Product
  - Toolbox:
    - Machine Learning, AI
    - Real-time processing
  - Management
  - Training, Communication, Outreach

FPGA@PUNCH 2.0 ?

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    - FPGA toolbox
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FPGA@PUNCH 2.0 ?

- FPGA boards with different resources as "experimental" platform
  - standard fabric
  - AI devices
  - I/O
- Can industry be involved? Do they have their own platforms?
- examples:
  - https://excalibur.ac.uk/projects/fpga-testbed/
  - https://www.epcc.ed.ac.uk/hpc-services/fpga-testbed
  - https://cloudlab.us/ (only US)
- Setup:
  - Server with
    - development platform
      - device specific
      - generic
      - simulation, synthesis
    - licences
    - FPGA hardware
  - How many FTE needed for development?
  - How many FTE needed for client support?
  - How many FTE needed for technical support?
  - Location:
    - one site? several sites?
    - computer centre? maybe already FPGA cards available?

FPGA@PUNCH 2.0 ?

- FPGA used mainly for very specific needs
  - high I/O bandwidth
  - latency-critical processing
  - parallel processing
  - ASIC prototyping
  - ...

- What do we gain?
  - What is the advantage for users compared to buying a few hundred dollar devkit and explore on their own?
  - If we explore new/recent FPGA models and technology: financial resources and developers needed

- Time-line:
  - 5 years PUNCH2.0
  - X years own resources
  - long-term perspective needed? (finance, personnel)

- Need sufficient resources to become attractive for users:
  - fast and competent
  - platform maintenance and development
  - user support
    - will likely need more than just "upload your project here": debugging, development support, ...

- Possible other players in FPGA world: HZDR?, DZA?...