MACUP (Material for Acquisition Upgrade): Project focusing on DAQ architecture upgrades for SOLEIL

G. RENAUD
Synchrotron SOLEIL (Paris, France)

THMPA09
Context and goal of the project

- How to ensure the operational continuity of the systems in production (MCO)?
- How to improve acquisition systems and introduce more performances?
- The answer: the MACUP project

Context and goal of the project:
- 10 years of operation with the same DAQ technologies
- More than 1000 boards in production
- Obsolescence’s issues are increasing
- Technologies not recommended for new projects requiring high performances

Applications targeted: fast analog/digital, instrumentation and field bus processes

MACUP: Project focusing on DAQ architecture upgrades for SOLEIL
MACUP Methodology

- Organisation:
  - Establishment of an **advisory committee** (largely cover requirements from all field of activity or science)

- **Census of future projects**

- Analysing factors
  - Reassessing the existing CPCI architecture

- **Technology Prospecting**

- External Exchanges
  - Industrial Partners (Adlink, NI, NAT, Pentair...)
  - Institutions (CNRS...), partnership facility (ESRF, MAX4, DLS...)

**ICALEPCS 2017**

Barcelona - Spain, October 8-13 - Palau de Congressos de Catalunya
For the existing in operation DAQ systems:

- Big CPCI hardware migration campaign: 200 CPUs to be replaced (2 year work)
- Projects: 47 identified at the end of the census
- New platforms selected:
  - Xilinx Zynq SOM based platforms (PandaBox available for users)
  - MicroTCA platform Evaluation and new Zynq based AMC
  - A reflexion on the existing open and modular frameworks (with FPGA developers community) has to be done

Thanks for your attention

Poster Session : THMPA09