2023 MicroTCA/ATCA for Large Scientific Facility Control Workshop

Summary on MicroTCA Workshop in Shenzhen

2023.12.5

Organizing Committee of 2023 MicroTCA/ATCA for Large Scientific Facility Control Workshop

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Brief of Workshop in China

Time: 2023.10.31-2023.11.2
Location: Shenzhen, China
Participants: 83
Host: Institute of Advanced Science Facilities, IASF

INVITATION LETTER

for Attending 2023 MicroTCA/ATCA for Large Scientific Facility Control Workshop

Dear colleagues,

We are pleased and honored to announce the upcoming 2023 MicroTCA/ATCA for Large Scientific Facility Control Workshop on June 27 – 29, 2023 [MTCA/ATCA2023] in Shenzhen, China.

The MTCA/ATCA2023, organized by the Institute of Advanced Science Facilities, Shenzhen (IASF), will be held at Guangming Cloud Park International Conference Center, Shenzhen, Guangdong Province, China. The workshop will be held on-site and online via ZOOM at the same time.

The conference website : https://indico.iasf.ac.cn/ (coming soon)

Important dates and deadlines:

- Registration Opens: April 30, 2023
- Abstract submission Ends: June 15, 2023
- Talk confirm: June 17, 2023
- Registration Ends: June 22, 2023

The Workshop promotes and coordinates the development of MTCA/ATCA standards and systems in China and East Asia, especially in data acquisition, digital signal processing, measurements, instrumentations, Controls, and Analog Circuit (Microwave/RF) applications in particle accelerators, high energy physics, photon/neutron sciences, plasma fusion, high power laser, and industries. The workshop also provides a platform to discuss technologies, ideas, and collaborations.

The Workshop's main Topics include:

1. Applications in research facilities
2. Applications in the industry
3. New Products
4. New Technologies
5. Future of standard and interoperability
6. Software and firmware
7. Industry Exhibition – presentation of modules and systems from industry and research

Programme Committee:

Dongbin Sun (Chair)	IASF
Holger Schlarb (Co-chair)	DESY
Paul Chu (Co-chair)	Nanjing University
Lei Shi	IASF/DICP
Rong Liu	Beijing Normal University
Zeran Zhou	USTC
Junqiang Zhang	Shanghai Advanced Research Institute, CAS

Programme Committee:

Yibao Cui	IASF
Lei Shi (Chair)	IASF/DICP
Bin Yang	IASF
Mingtao Wang	IASF
Fengjie Xiao	IASF
Yunfu Ding	IASF
Yuang He	IASF

Brief of Workshop in China

Venue Location

The workshop venue is at Multifunctional hall 2-3, Guangming Cloud Park International Conference Center, which is on No.98 Zhenyuan Road, Guangming district, Shenzhen, Guangdong province, China.

（光明区天安云谷国际会议中心4楼多媒体厅2-3）

35km from Bao'an International Airport

8km from Guangming City High-Speed Rail Station

2km from Zhenmei subway station（line 6）

300m from Guangming Yungu bus station（光明云谷）

Keynote Speakers

❑Keynotes

- Dongbai Sun, the leader of IASF, gave a welcome speech
- Zhentang Zhao, the leader of SARI, presented a report on the development of larger scientific facilities in China.

Keynote Speakers

❑Keynotes

- ➢ Mark Plesko gave a presentation on the control system.
- ➢ Kay Rehlich presented a report on the history of MicroTCA

COSYLAB

mTCA cases in our control system integration projects

- ESS
  - Struck sis8300 mTCA digitizer drivers (kernel+user-space with DMA support) and EPICS integration
  - EPICS integration of LLRF prototype based on SIS8300 with custom RTM
  - EPICS integration of BPM prototype based on SIS8300 with custom RTM
- FAIR
  - Design and production of mTCA White Rabbit timing receivers
  - Integration of Libera devices: LLRF, BPM circula, BPM hebt & BPM plinac
- HZDR-ELBE
  - integration of MRF-based timing system on mTCA
- NICA
  - Tango integration of MRF mTCA EVR timing receivers
  - mTCA based LLRF: electronics, front end, FPGA firmware, drivers, Tango integration




History of the MicroTCA Standard

Kay Rehlich, DESY

1. Nov. 2023

The 2023 MTCA/ATCA for Large Scientific Facility Control Workshop

Guangming Cloud Park International Conference Center, Shenzhen, China

PICMG

DESY

Introduction of S³FEL

Tutorials

❑Tutorials

- ➢ Basic Concepts of MicroTCA,
- ➢ Development Trends
- ➢ The Application of MicroTCA in Timing and LLRF Systems

Tutorial Session content

What we have here?

Tutorial: Introduction to MicroTCA Crate Standard -Alex Mao	09:15 - 10:00
Tutorial: Introduction to MicroTCA in LLRF control - Gan Nan	10:00 - 10:45
Coffee break	10:45 - 11:00
Tutorial: Introduction to MicroTCA in Timing system - Liu Fang	11:00 - 11:45
Tutorial: Implementing Applications in MicroTCA - Cagil Guemues	11:45 - 12:30
Lunch break	12:30 - 14:00
Workshop Welcome/ Lab Talks: Overview MicroTCA at DESY - Holger Schlarb	14:00 - 14:20/ 14:20 - 14:40
Tutorial: Introduction to IPMI - Heiko Koerte	14:40 - 15:00
Tutorial: Timing and Machine Protection MicroTCA - Kay Rehlich	15:00 - 15:30
Coffee break	15:30 - 16:00

The 2023 MTCA/ATCA for Large Scientific Facility Control Workshop Tutorial welcome

刘熔 · 深圳 · 2023.10.31

IASF 深圳综合粒子设施研究院
Institute of Advanced Science Facilities, Shenzhen

nVent SCHROFF

MTCA 系统规格的最新发展

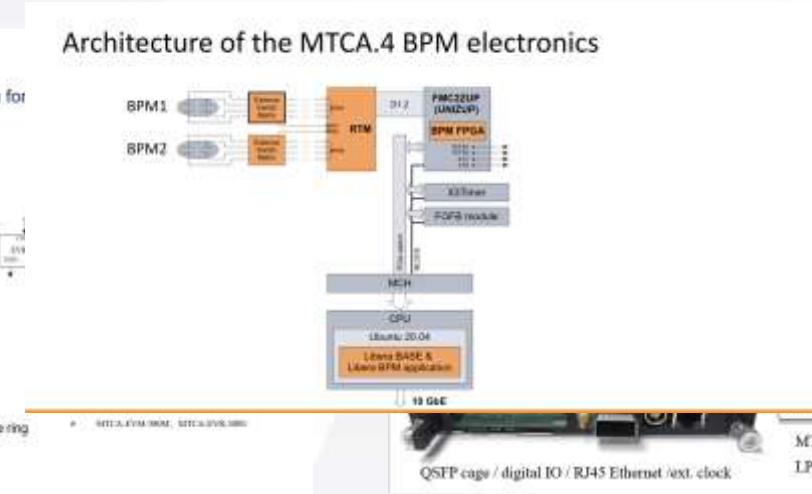
（暨盈凡电气的产品规划）

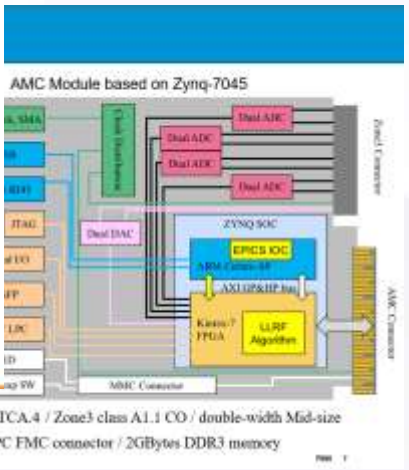
茅峻峰 盈凡电气亚太区产品经理
11-2023

Contributions and Labtalks

Topic of Interest

- MicroTCA for LLRF, timing, beamlines and MPS
- New products
- AI Integration





Open Discussion Topics

- What is the further of MicroTCA
- How make more suppliers into the MicroTCA area
- Long delivery time for some products
- Software frameworks for MicroTCA
- .....

Conclusion

- The MicroTCA has been widely adopted by the Chinese accelerator community.
- S^3FEL regards MicroTCA as the preferred electronic solution.
- Some progress has been made in the localization of MicroTCA equipment.
- Most of the Chinese accelerators only utilize the basic functions of AMC, and the platform management functions based on IPMI have not been widely adopted.
- We are expecting to initiate broader collaborations.

Next MicroTCA workshop in China

- Next workshop in China will hold in summer of 2024
- Looking forward to see you at USTC

University of Science and Technology of China(USTC), locates at Hefei city, the capital of Anhui province, China.

Hefei Light Source (HLS)

The construction of HLS included phase-I project (1984-1991) and phase-II project (1999-2004). From 2010, NSRL started HLS-II construction. With its completion(2014), NSRL now owns a fully upgraded soft X-ray synchrotron radiation facility.

THANK YOU