

13th MicroTCA Workshop
10 - 12 December, 2024
DESY, Hamburg



Workshop start: 14:00

Introduction: 13th MicroTCA Workshop 2024

for Industry & Research

Holger Schlarb,
Accelerator Beam Controls (MSK)/DESY
DESY, 10.12.2024



Hybrid



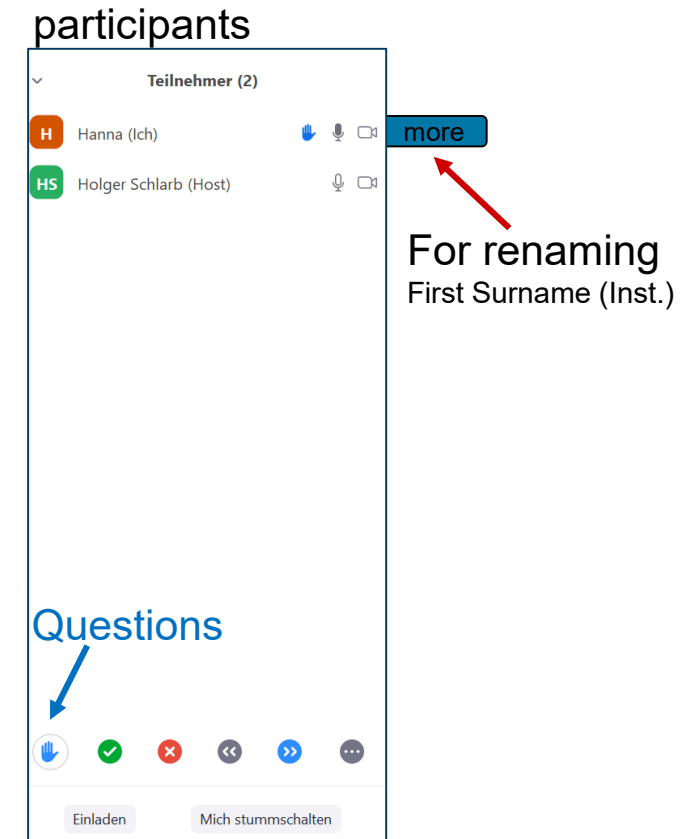
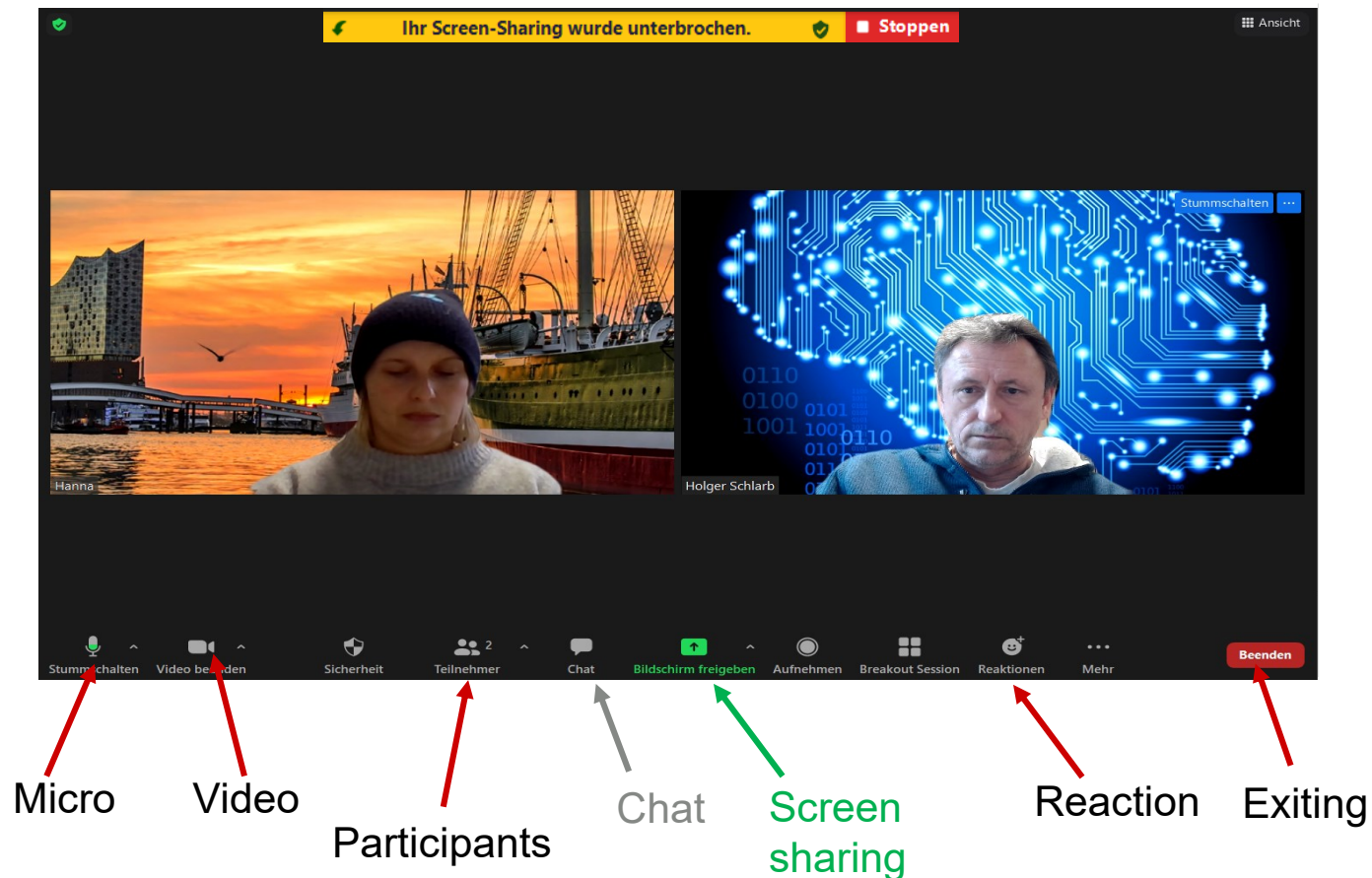
Networking

Info's ZOOM Meeting

Remote Participants: please keep micro muted

Remote Speakers: please video on/ **green button** for slide sharing

Remote Questions: use chat / **raise hand** / switch video & micro on



Welcome all our participants from research ...

Institutes:



Science & Technology
Facilities Council



EUROPEAN
SPALLATION
SOURCE



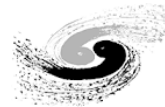
MAX-PLANCK-INSTITUT
FÜR PLASMAPHYSIK



HZB Helmholtz
Zentrum Berlin



HZDR
HELMHOLTZ ZENTRUM
DRESDEN ROSENDOF



Institute of High Energy Physics
Chinese Academy of Sciences



Fermilab

University:



Lodz University
of Technology



POLITÉCNICA



Welcome all our partners from industry ...

Exhibitors:



Participants:



Workshop program Tu / We / Th

Indico page: <https://indico.desy.de/event/46036/timetable/#all.detailed>

Morning: three tutorial sessions ~ 7 contributions, Tu 9:00 – 12:30

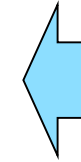
Tue 10/12 55 new participants!

MicroTCA Basic tutorials



Time	Topic	Speaker	Room
09:00	Introduction	Kay Rehlich	Building 03, Seminar Room 304
	MicroTCA Basics	Ralf Waldt	
	MicroTCA Management	Heiko Körte	
10:00	Communication links, clocks and triggers	Kay Rehlich	
	Coffee break		
11:00	Unlocking MicroTCA.4 for FPGA Developers	Cagil Guemues	Building 03, Seminar Room 304
12:00	Control Application Interfacing with ChimeraTK and Python	Dietrich Rothe	

MicroTCA hardware developers



FPGA integration



Software integration



Workshop program

Tu / We/ Th

8 session with 36 talks:
➔ 13min + 2min Q&A

Keynotes: 60 yrs of SR (E. Weckert)
AD & DA Conv. (M. Walker)

15" discussion slot after each session

14.00 ➔

Tuesday		
14:00	Introduction	Dr Holger Schlarb
		14:00 - 14:15
	Welcome	Beate Heinemann
		14:15 - 14:30
	Status of upgrades to MicroTCA at the Spallation Neutron Source	Thomas Justice
		14:30 - 14:45
	Current Status of MicroTCA at ESS	Faye Chikien
		14:45 - 15:00
15:00	ITER Fast Instrumentation and Control: Current Status and Plans for MTCA	Sergio Esquivel
		15:00 - 15:15
	Discussion	15:15 - 15:30
	Coffee break	15:30 - 16:00
16:00	Keynote: 60 Years of Synchrotron Radiation	Edgar Weckert
		16:00 - 16:30
	MTCA-based Accelerator Control Systems at DESY	Tim Wisker
		16:30 - 16:45
	Status of MTCA at J-PARC in 2024	Fumihiko Tamura
		16:45 - 17:00
17:00	MTCA-4-based high-speed digitizer system for J-PARC MR	Yasuyuki Sugiyama
		17:00 - 17:15
	Modernizing Fermilab's Accelerator Control Hardware	Andrew Whitbeck
		17:15 - 17:30
	Update on a MicroTCA-based control system for quantum computers	Jan Marjanovic
		17:30 - 17:45
	Discussion	17:45 - 18:00

Wednesday		
09:00	Summary on the MicroTCA workshop in China	Zhen Zou
		09:00 - 09:15
	MicroTCA use at HEPS	fang Ju
		09:15 - 09:30
	Update of CERN Proton Synchrotron (CPS) Beam Controller based on MicroTCA architecture	Francisco Javier Diaz Fombr
		09:30 - 09:45
	KeyNote: Technology advances in AD and DA converters, an outlook	Martin Walker
		09:45 - 10:15
	Discussion	10:15 - 10:30
	Coffee break	10:30 - 11:00
11:00	Introducing nVent SCHROFF's Cutting-Edge MTCA.4 Crate with Superior Bandwidth and Cooling	Christian Ganninger
		11:00 - 11:15
	NAT-MCH Gen4	Heiko Korte
		11:15 - 11:30
	Update on MicroTCA.0 R.3 and other new products	Karl Judek
		11:30 - 11:45
	Add high channel count Analog IO to MTCA.4	Mr Peter Milne
		11:45 - 12:00
12:00	X86 CPU boards for MicroTCA	Herbert End
		12:00 - 12:15
	Discussion	12:15 - 12:30
	Lunch	12:30 - 14:00
14:00	The Path to Series Production of the MicroTCA.4 Based Scientific Detector Controller (NGCI) for the Extremely Large T...	Matthias Riechers
		14:15 - 14:30
	MTCA starterkits next step evolution	Thomas Holzapfel
		14:30 - 14:45
	microTCA for the CMS Experiment at the Large Hadron Collider	Kristian Harder
		14:45 - 15:00
	FWK - Open Source FPGA Framework from DESY	Capil Quemes
		15:00 - 15:15
15:00	Improving Signal Integrity of the Yamaichi AMC and Zone 3 Connectors	Michael Ferner
		15:15 - 15:30
	Discussion	15:30 - 16:00
	Coffee break	16:00 - 16:15
16:00	Status of the new MTCA.4 motion controller and its application in photon science	Martin Tolk
		16:15 - 16:30
	Status Update on the Open-Source Synchronous Multi-Axis Motion Controller Solution for Large-Scale Experimental Ph...	Michael Rindl
		16:30 - 16:45
	The use of DAMC-UNIZUP board for the MTCA.4 BPM system for PETRA IV	Alwin Bendorfer
		16:45 - 17:00
	Status Update on MicroTCA based Fast Orbit Feedback System for PETRA IV	Sajad Hussain Mirza et al.
		17:00 - 17:15
17:00	Development of a new AMC card for the Diamond-II EBPM Upgrade	Michael Abbott
		17:15 - 17:30
	µTCA based kHz camera readout for beam stabilization for KALDERA at DESY	Mr Carsten Dülken
		17:30 - 17:45
	Discussion	17:45 - 18:00

Thursday		
09:00	MTCA applications at HZDR	Michael Kurtzsch
		09:00 - 09:15
	Image Acquisition and Processing with MicroTCA.4	Dariusz Makowski
		09:15 - 09:30
	The DAMC-DS9014DR: A High-Speed and High-Performance RFSoC-Based Platform for Diverse Scientific Applications	Benzar Boghvat
		09:30 - 09:45
	Update of controls for the MINERVA project	Kris Mees
		09:45 - 10:00
10:00	LISA phasemeter project update	Prof. Oliver Gerberding
		10:00 - 10:15
	Discussion	10:15 - 10:30
	Coffee break	10:30 - 11:00
11:00	Main Oscillator with sub-fs Resolution and High Performance Local Oscillator Generation in MicroTCA.4	Jiaoni Bai
		11:00 - 11:15
	Remote setup of LLRF control systems through the example of TARLA	Patrick Noni
		11:15 - 11:30
	Jump-Start Control Application Development with ChimeraTK and Python	Dietrich Rothe
		11:30 - 11:45
	Update: MicroTCA Next Generation specification	Kay Reihlich
		11:45 - 12:00
12:00	Discussion	12:00 - 12:30
	Closure	12:30 - 12:45
13:00	Lunch	13:00 - 14:00
14:00		

←14.00

Sufficient time for departure

18:15



Further dissemination of MicroTCA...

Large-scale accelerators:

America

SNS



Thomas Justice (ORNL)

APS-U

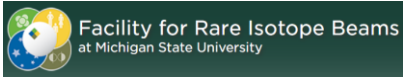


Fermilab

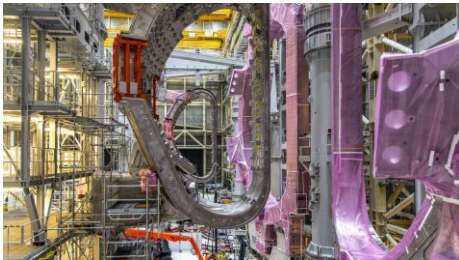


Andrew Whitbeck (FNAL)

Sirius



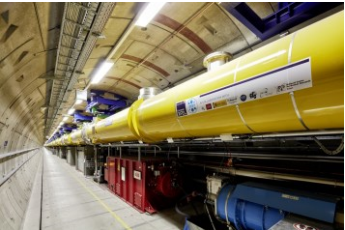
ITER



Sergio Esquembri (ITER)

Europe

EuXFEL



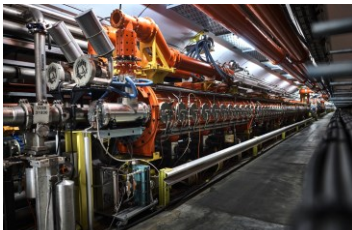
Tim Wilksen (DESY)

ESS



Faye Chicken (ESS)

CERN



Francisco Ferreira (CERN)

FAIR - GSI



Diamond



Alba

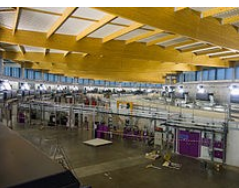


MYRRHA new



C. Joly (SCK-CEN)

Soleil



Bessy



PETRA IV



...

Asia

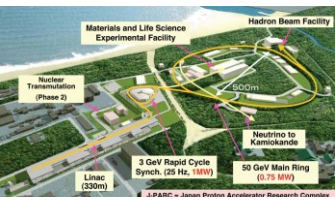
PAL-FEL



Spring 8



J-PARC



Fumihiko Tamura (J-Parc)
Yasuyuki Sugiyama (KEK)

CSNS



SXFEL



HEPS new



Fang Liu (IHEP)
BEPC new



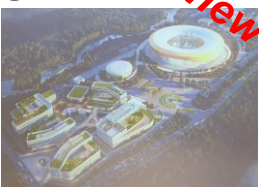
HALF/HLS-II new



S3FEL... new



UTF new



Ansto



...

Regional Workshops, China



2024 MicroTCA/ATCA

for Large Scientific Facility Control International Workshop



18. Sep – 20. Sep 2024
Hefei

<https://indico.pnp.ustc.edu.cn/event/1979/overview>

2024 MicroTCA/ATCA for Large Scientific Facility Control Workshop

Hosted by USTC

→ Summary by Zeran Zhou



31. Oct – 2. Nov 2023
Shenzhen

2023 MicroTCA/ATCA for Large Scientific Facility Control Workshop

Hosted by **IASF**

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

→ Summary by Lei Shi (2023)

Regional Workshops, US



EPICS Collaboration Meeting

Sep 16 – 20, 2024
Spallation Neutron Source
US/Eastern timezone

Enter your search

16th September 2024

Monday Afternoon, Track 2

μTCA Working Group

Get-together of μTCA users to exchange experience and ideas:

- 13:10 Introduction/MicroTCA at SNS
- 13:30 MicroTCA at FRIB
- 13:50 MicroTCA at FNAL
- 14:10 MicroTCA at APS
- 14:30 IPMI EPICS Tool
- 14:50 Break
- 15:20 Open Discussion

OAK RIDGE
National Laboratory

Facility for Rare Isotope Beams
at Michigan State University

Fermilab

Argonne
NATIONAL LABORATORY

ESS
EUROPEAN
SPALLATION
SOURCE

➔ *Organized by Alan Justice*

Overview

Travel, Directions, Hotels

Workgroups and Training

Scientific Program

Call for Abstracts

Timetable

Registration

Kristin Massengill

✉ massengillke@ornl.gov

☎ 865-341-2442

Workgroups and Training

Monday and Friday, Sept. 16 & 20, 2024, was reserved for workgroup or training sessions.

Recordings for several of the sessions are available on <https://controlsoftware.sns.ornl.gov/training/2>

Monday Morning, Track 1

EPICS 7 Overview

Demo of using PVAccess with IOCs and C++ applications. You can follow along using a training-VM.

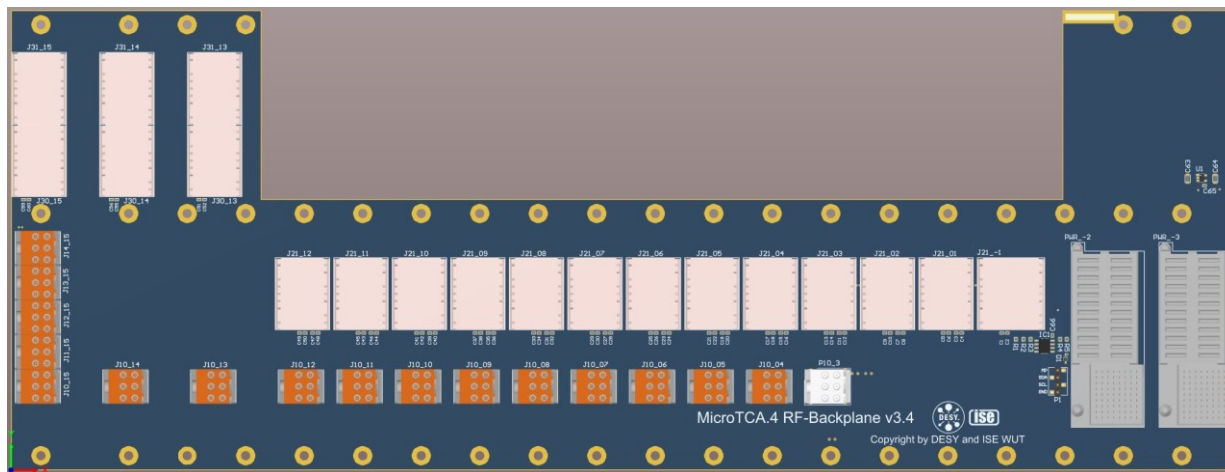
- Top level repository for all the training material: <https://github.com/epics-training/training-collect-oakridge>
- Links to VM images will be provided soon. Instructions for creating the training VM yourself: <http://training/training-vm/blob/main/doc/creating-vm-from-scratch.md>

OPC UA Device Support

⋮

Ongoing discussions...

Improved RF Backplane design ... (LISA)

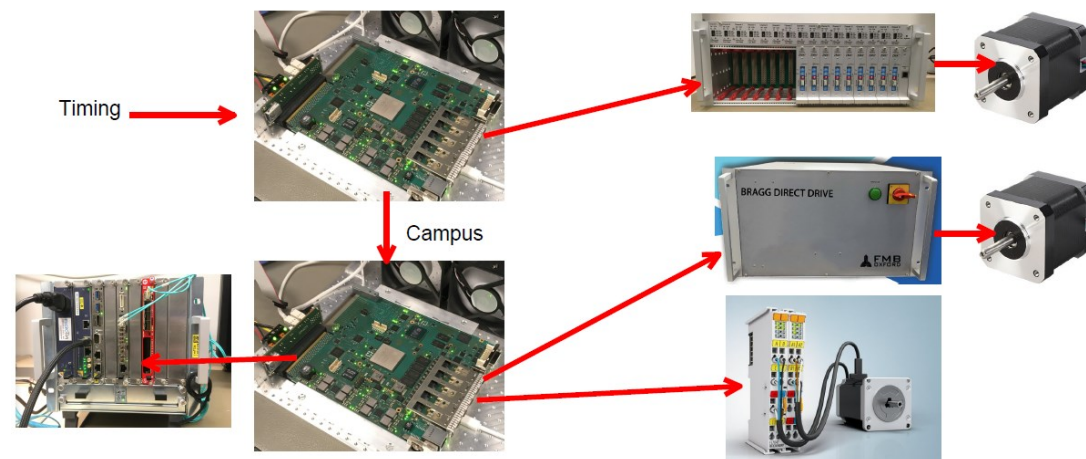


- Length matched RF traces
- #3 with RF Radial connector

For interested colleagues please contact
→ Johannes Zink, Frank Ludwig or Michael Pawelzik



Discussion on MotionCntr@MicroTCA



→ HW integration / SW stack

Discussion on **Thurs. 15:00**

Please contact Cagil Gümüs or Michael Randall

If you have any other topic, may prepare
1 – 2 slides and make use of the
discussion slots

...

Workshop Organization

Workshop organized by

Advisory committee:

Kay Rehlich (Chair)	DESY
Holger Schlarb (Chair)	DESY
Christian Ganninger	nVent - Schroff GmbH
Augusto Fraga Giachero	LNLS
Tobias Hoffmann	GSI
Thomas Holzapfel	powerBridge
Alan Justice	ORNL
Heiko Koerte	N.A.T.
Rong Liu	Beijing DAQ Technology Co. Ltd
Xinpeng Ma	IHEP
Dariusz Makowski	Lodz Uni. of Technology
Jan Marjanovic	Atom Computing
Fumihiko Tamura	J-PARC Center, Japan
Axel Winter	MPI Plasmaphysik

Local organization:

Hanna Kunze	DESY
Gohar Ayvazyan	DESY



Hanna Kunze

Valuable input for shaping the workshop!!!

Workshop Dinner

Wednesday, 11th of December



- Harbour Cruise with “**MS HANSEATIC**”
- Shuttle busses start at **6.15 pm** in front of the CFEL
- Departure of **MS HANSEATIC**: 7.30 pm, Überseebrücke Hamburg
- Returning around 11:00 pm to DESY (main gate)
- Please inform the registration desk if you can not attend!

General information

Speaker info

- 12 minutes slot for each talk plus 3 min for questions
- Presentations need to be handed to the organization team before the session starts
- Magic presenter (please do not use your own laptop)

SCHEDULE

- DESY Tour #1: Wed, 10 Dec, 12:30-13:30
- DESY Tour #2: Thurs, 11 Dec, 12:30-13:30

WLAN

- Name: **Science Hotspot**



Thank you! And lets start...

**Wish you an informative
and pleasant
13th MicroTCA Workshop!**