



Close out: *13th MicroTCA Workshop for Industry & Research (2024)*

Holger Schlarb, MSK/DESY
DESY, 12.12.2024

13th MicroTCA Workshop for Industry & Research

Statistics

55 new participants!

Participants	184	207	190	189	200	198	188	183	159	177	188	191	180
Institutes	26	30	26	29	37	34	22	27	25	31	30	30	25
Companies	25	27	23	21	23	25	31	24	28	36	39	39	29
Exhibitors	11	14	13	9	9	12	14	13	14	14	16	16	12
Talks	36	42	44	40	44	43	43	38	38	45	44	53	42

- Well prepared & clear talks
- Lively discussions ...
- Enthusiastic and very informative
- Networking in focus

Newcomers ~ 30 % (1st time)
High recurrent ~ 40 % (≥ 4)

Workshop program Tu / We / Th

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

Morning: **three tutorial tracks ~ 7 presentations, Tu 9:00 – 12:30**

Keynotes: 1 Science & 1 Technology

Wednesday

09:00	Summary on the MicroTCA workshop in China	Zeran Zhang
		09:00 - 09:15
	MicroTCA use at HEPS	fang
		09:15 - 09:30
	Development of CERN Proton Synchrotron (CPS) Beam Controller based on MicroTCA architecture	Francisco Javier Diaz Fernandez
		09:30 - 09:45
	KeyNote: Technology advances in AD and DA converters, an outlook	Martin Walkowiak
		09:45 - 10:00
	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 Gernyng
		11:00 - 11:15
	NAT-MCH Gen4	Helko Kohn
		11:15 - 11:30
	Update on MicroTCA 2.0 R.3 and other new products	Karl Juchacz
	Dr Holger Schiavo	
	14:00 - 14:15	
	Quantum Analog IO to MTCA.4	Mr Peter M...

Tuesday

14.00 →

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 Chickens
		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 Wilcken
		16:30 - 16:45
	Status of MTCA at J-PARC in 2024	Fumiko 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 Whitebeck
		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
18.00		

Thu 12/12

Tuesday

MicroTCA		Tuesday	
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-D55014DR: A High-Speed and High-Performance RPSG-Based Platform for Diverse Scientific Applications	genzel@sigmat	
	Update of controls for the MINERVA project	Kris Meus	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	Jacob Ba	11:00 - 11:15
	Remote setup of LLRF control systems through the example of TARLA	Patrick Nanni	11:15 - 11:30
	Jump-Start Control Application Development with ChimerATK and Python	Dietrich Rothe	11:30 - 11:45
	Update: MicroTCA Next Generation specification	Katy Renisch	11:45 - 12:00
12:00	Discussion		12:00 - 12:30
	Closetout		12:30 - 12:45
13:00	Lunch		
14:00			13:00 - 14:00
			17:00 - 17:15
	12 camera readout for beam stabilization for KALDERA at DESY	Mr. Carsten Dülgen	17:15 - 17:30
			17:30 - 17:45

← 14.00

MicroTCA Tutorials

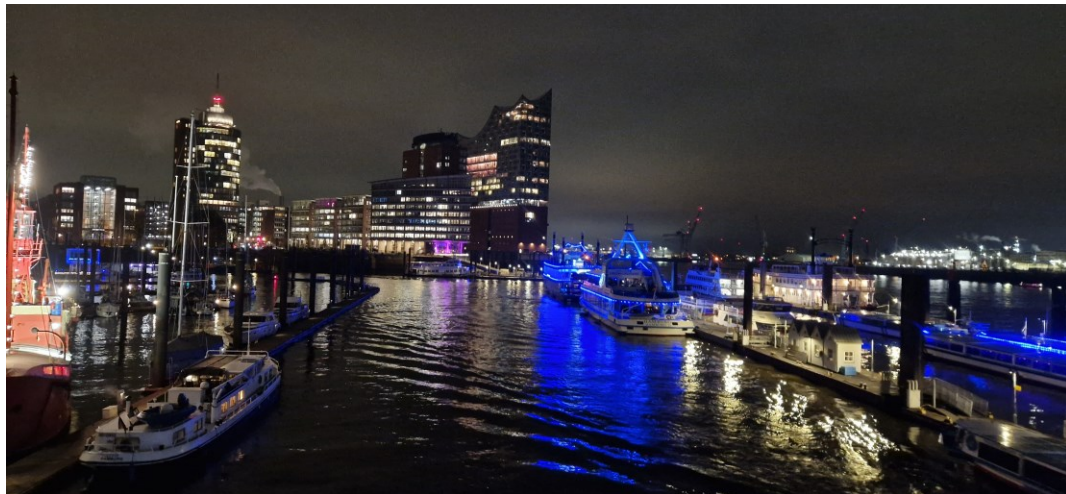
Firmware & Software Frameworks

Tue 10/12					
09:00	Introduction	Kay Rehlisch 09:00 - 09:05	MTCA Tutorial: Hardware Design and Test Environment		
	MicroTCA Basics	Ralf Waldt 09:05 - 09:35			
	MicroTCA Management	Heiko Korne 09:35 - 10:05			
10:00	Communication links, clocks and triggers	Kay Rehlisch 10:05 - 10:30	Building 03, Seminar Room 304 09:00 - 10:30		
Coffee break					
					10:30 - 11:00
11:00	Unlocking MicroTCA.4 for FPGA Developers	Cagil Guemes			
					11:00 - 11:45
	Control Application Interfacing with ChimeraTK and Python	Dietrich Rothe			
12:00					11:45 - 12:30

MicroTCA Hardware

36 talks
2 Keynote

Location... some picture



Participating entities...

Institutes:



Universities:



Exhibitors:



Industry:



Further dissemination of MicroTCA...

Large-scale accelerators:

→ Truly International

America

SNS

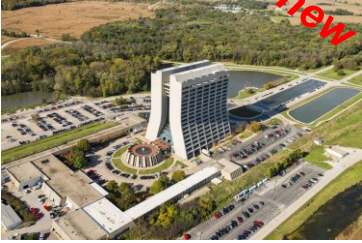


Thomas Justice (ORNL)

APS-U



Fermilab



Andrew Withbeck (FNAL)

Sirius

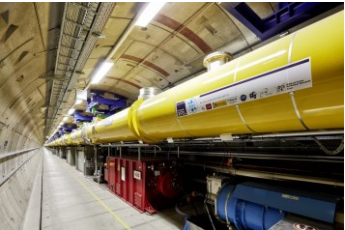


Brookhaven
National Laboratory

Facility for Rare Isotope Beams
at Michigan State University

Europe

EuXFEL



Tim Wilksen (DESY)

ESS



Faye Chicken (ESS)

CERN



F. Ferreira (CERN)

FAIR - GSI



Diamond



Alba



MYRRHA *new*



K. Meeus (SCK-CEN)

Soleil



Bessy



PETRA IV



Asia

PAL-FEL



Spring 8



J-PARC



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

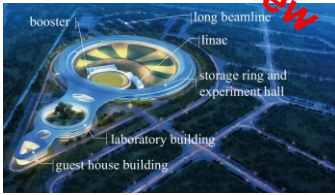
CSNS



SXFEL



HEPS



BEPC



HALF/HLS-II



S3FEL...



UTF



Ansto



Community is steadily growing...

Looking forward on updates & news from:

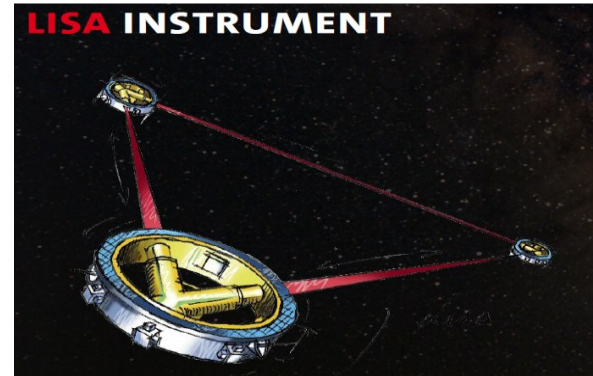
→ Cross discipline synergies

Astrophysics Observatories



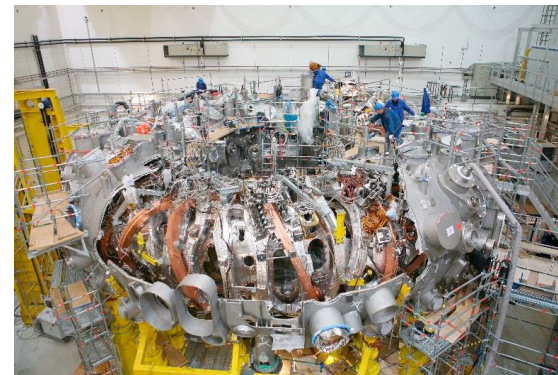
M. Richerzhagen (ESO)

Gravitational Wave Detection



Oliver Gerberding (UniHH)

Fusion: W7-X Stellerator

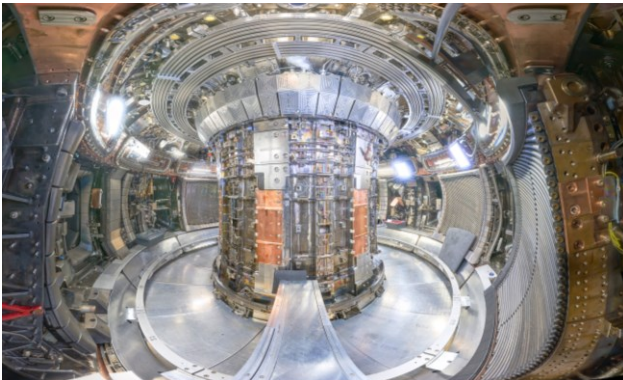


Sergio Esquembri (ITER)

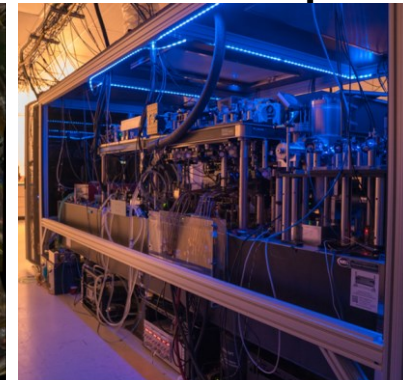
Fusion: ITER



Fusion: ASDEX

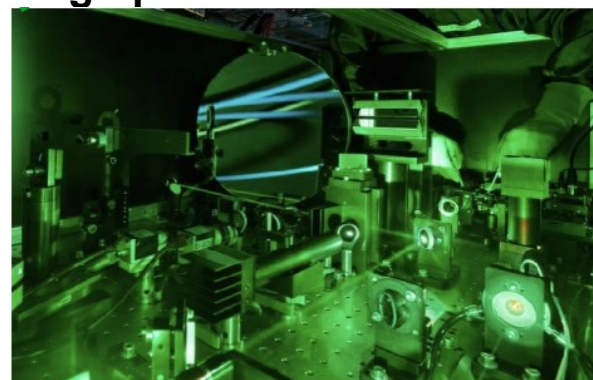


Quantum Comp.



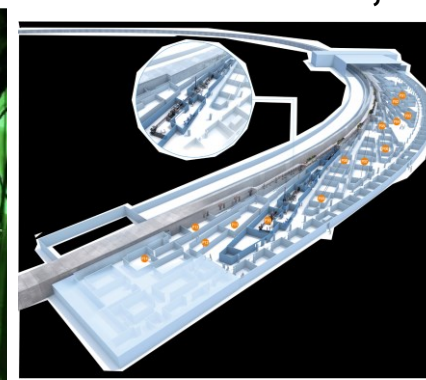
J. Marjanovic (Atom Comp.)

High power lasers



C. Duelsen (DESY)

Photon beamline, exp. and detectors



M. Tolkiehn (DESY)



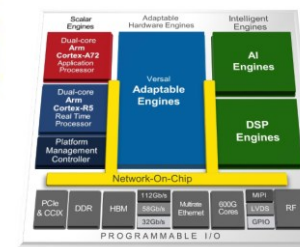
Close relations ...

Hardware accelerators

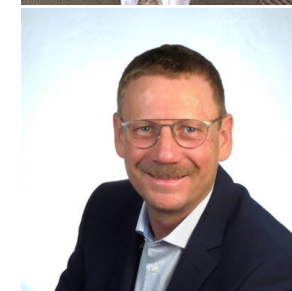
BIG DATA



AI Eng.



2022



- **Keynote:** Future Trends and Tech. of CPU's & FPGAs by Dirk Blevins (Intel)
- Adaptive Computing & ACAP Architectures by Jens Stapelfeldt (AMD)

➔ Discussion started ... first steps have been realized already

Takeaway from 13th MicroTCA Workshop

➤ **Face-to-face** (~165) + virtual participation (~19)

➤ Indispensable for building **network**:

- Get known to each others... who is who
- Exchange solutions and idea's
- Creation of an innovative space ...
- Community support ...

Almost familiar atmosphere

➔ **Cross-discipline synergies**

➤ **Keep format** (~ 1-2 keynotes / compact talks / **discussion buffer !!!**)

➤ **Tutorial tracks** (Basic, HW/FW/SW) $\Sigma \sim 80$ / 30

- **Education** of young engineers & scientists

➤ **FW and SW Frameworks & Developements**

➔ *Became new bond*

Topics:

- **Yocto / embedded system / handling MPSoC**
- **Asset management, deployment tools, system integration...**
- **Next generation of components / MicroTCA**



Chair: Kai Rehlich

Thanks to

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

Valuable input for shaping the workshop!!!

Local organization:

Hanna Kunze	DESY
Gohar Ayvazyan	DESY



Hanna Kunze
+ Roman Seibert & Stanislav Chystiakov & Bart Szczepanski

Tour Guides





Safe-the-date 14th MicroTCA WS:

02-04.12.2025
(Tu-Th)

13th MicroTCA Workshop for Industry & Research

**Thank you for joining
&
Save return Journey**