



Sima Baymani :: Head of Section Control Systems :: Paul Scherrer Institute

#### IT Quartalsinfo – Controls update

23.2.2023





- Controls overview and intro
- Controls contacts
- Controls in numbers
- Ongoing activities



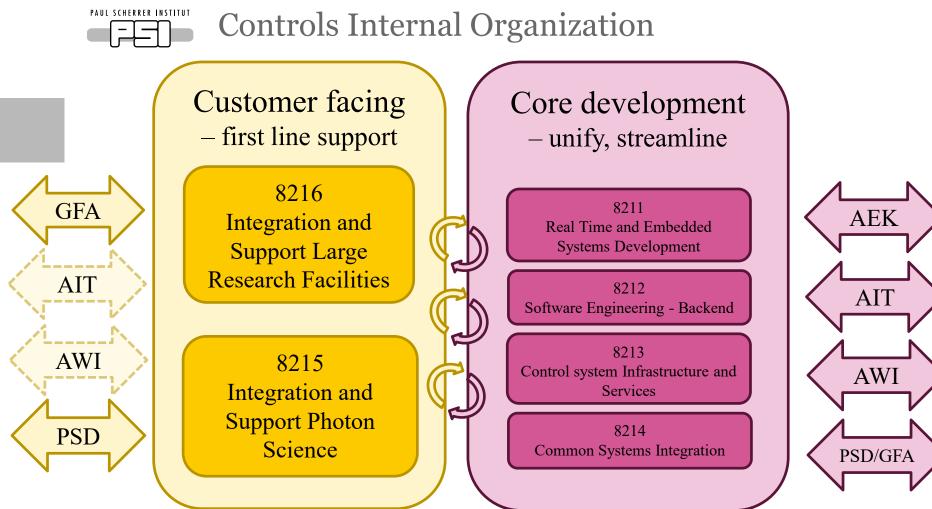
#### Controls at the Division Level

Research Committee Human Resources Managem Center for Proton Therapy	Prof. Dr. Marco St nent Karsten Bugmann Prof. Dr. Damien V	1	Director: Prof. Dr. Christian Members of the board of di Prof. Dr. Gabriel Aeppli* Dr. Peter Allenspach Prof. Dr. Gebhard F. X. Scher Prof. Dr. Thomas J. Schmidt Prof. Dr. Thomas J. Schmidt Prof. Dr. Mike Seidel Dr. Thierry Strässle*	rectors:	Directorate Support Human Resources Ma Safety Communications Science Finance and Administ Technology Transfer	anagement Karsti Dr. W Dr. M Dr. In Dr. In Dr. M trative Services Dr. Fra	ierry Strässle en Bugmann erner Roser irjam van Daalen es Günther-Leopold ichèle Erat ank Behner Willard
Research Division Biology and Chemistry (BIO) Prof. Dr. Gebhard Schertler Center for Radiopharmaceutical Sciences Prof. Dr. Roger Schibli Biomolecular Research Prof. Dr. Michel Steinmetz Nanoscale Biology Prof. Dr. G. V. Shivashankar	Research Division Research with Neutrons and Muons (NUM) Dr. Alex Amato a.i. Particle Physics Prof. Dr. Klaus Kirch Neutron Scattering and Imaging Prof. Dr. Michel Kenzelmann Muon Spin Spectroscopy Dr. Thomas Prokscha a.i. Neutron and Muon Instrumentation Prof. Dr. Marc Janoschek Multiscale Materials Experiments Prof. Dr. Thomas Lippert		Research Division Energy and Environment (ENE) Prof. Dr. Thomas J. Schmidt Bioenergy and Catalysis Prof. Dr. Oliver Kröcher Electrochemistry Dr. Felix Büchi a.i. Atmospheric Chemistry Prof. Dr. Claudia Mohr (ETHZ) Environmental Chemistry Prof. Dr. Margit Schwikowski Catalysis and Sustainable Chemistry Prof. Dr. Jeroen van Bokhoven tems Analysis sseell McKenna	Research Division         Photon Science         (PSD)         Prof. Dr. Gabriel Aeppli         Macromolecules and Bioimaging         Dr. Oliver Bunk         X-ray Nanoscience and Technologies         Dr. Yasin Ekinci         Condensed Matter         Prof. Dr. Frithjof Nolting         Femtochemistry         Prof. Dr. Christoph Bostedt         Advanced         Spectroscopy and X-ray Sources         Prof. Dr. Lue Patthey         Nonlinear Optics         Prof. Dr. Availeri         Nano and Quantum Technologies         Prof. Dr. Kirsten Moselund	Research Division Scientific Computing, Theory and Data (SCD) Prof. Dr. Christian Rüegg, a.i. Simulation and Modelling Dr. Andreas Adelmann a.i. Theoretical and Computational Physics Prof. Dr. Andreas Läuchli Materials Simulations Prof. Dr. Nicola Marzari Science IT Infrastructure and Services Dr. Alun Ashton	Division Large Research Facilities (GFA) Prof. Dr. Mike Seidel Accelerator Operation and Development DD Dr. Daaiela Kicelau Electronics and Control Systems Dr. Thomas Schilcher Engineering and Coordination Kilian Rolli Accelerator Technologies Dr. Hans-Heinrich Braun	Division Logistics (LOG) Dr. Peter Allenspach Finance and Administrative Services Dr. Frank Behner Buildings and Services Lilian Jakob Infrastructure and Electrical Installation Markus Jörg Information Technology Ronny Peterhans Radiation Safety and Security Dr. Sabine Mayer Communications Dr. Mirjam van Daalen



#### Controls at the Department Level

]	Elektronik und Kontrollsysteme (AEK) Dr. T. Schilcher 1200	
Kontrollsysteme S. Baymani 8210 RT and Embedded Systems Development D. Maier-Manojlovic 8211 Software Engineering – Backend T. Humar 8212 Control System Infrastructure and Services D. Maier-Manojlovic a.1. 8213 Common Systems Integeration S. Baymani a.1. 8214 Integration and Support – Photon Science Dr. T. Celcer 8215 Integration and Support – Large Research Facilities Dr. T. Celcer a.1. 8216	Elektronik B. Kalantari 8220 Digitale Signalverarbeitung Dr. W. Koprek 8221 Hardware Entwicklung P. Pollet 8222 Hardware Support K. Bitterli 8223	Messsysteme und Synchronisation Dr. F. Löhl 8230 Beschleuniger Feedbacks und Messsysteme Dr. B. Keil 8231 Timing und Synchronisation Dr. C. Sydlo 8232





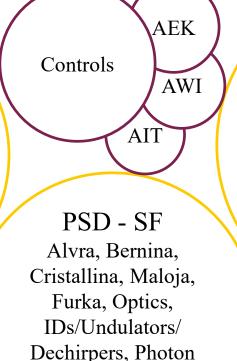
#### Our Stakeholders and Collaborators

PSD - SLS Debye, IR, s-TOMCAT, i-TOMCAT, PEARL, ADRESS, VUV, MS, µXAS, FEMTO, PXIII, PXI, PolLux, nanoXAS, XTREME, Phoenix, SIS, XIL, SuperXAS, PXII, SIM, RESOXS, cSAX, Insertion Devices, Optics, Diagnostics

Diagnostic

ENE

PSI-PROJ's sls2, impact, esup



Diagnostics, Gun

Laser, Pump Laser

**GFA** e-Instrumentation(x2), e-Dynamik(x2), p-Instrumentation, p-Dynamik, OP-HIPA, **OP-Proscan**, **OP-SLS**, **OP-SF. BPMs**, Vacuum, Power Supplies, Pulsed Magnets, RF(x3), Timing&sync, Cyklotrontech ZPT LOG

G1, G2, G3, Optis

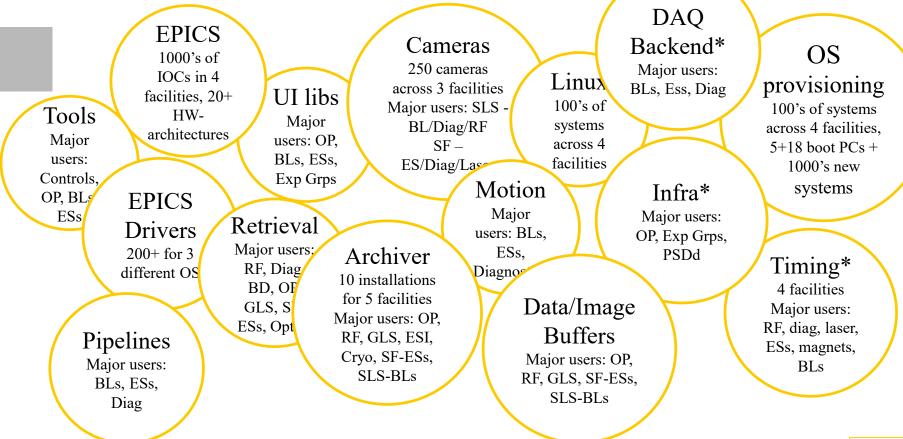
Page 6

Cryo,

**PLCs** 



### **Controls Base Level Services**





#### **Contacting Controls**

- <u>https://intranet.psi.ch/en/controls</u> (WIP)
- <u>https://intranet.psi.ch/en/controls/sls-beamlines-controls-contacts</u>
- <u>https://intranet.psi.ch/en/controls/swissfel-photon-science-psd-controls-contacts</u>
- <u>https://intranet.psi.ch/en/controls/large-research-facilities-gfa-controls-contacts</u>
- <u>https://intranet.psi.ch/en/controls/controls-baseline-services-contact-list</u>

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$\bigcirc$ PSI Intranet Home $>$ Controls	$\ensuremath{ \ensuremath{ \$			${}$ PSI Intranet Home $>$ Controls $>$ SLS Beamlines Controls Contacts				
25 April 2023 Controls Home Page	Simaolhoda Baymani   25 August 2023 Baseline Services Controls Contacts			Alvin Samuel Acerbo   27 September 2022 SLS Beamlines Controls Contacts				
Controls Contacts	Service	Baseline Services Controls Conta Primary contact	cts Seconda	Sector	Beamline	Beamline Scientist	Beamline Technician / Engineer	Controls Contact
<ul> <li>SLS Beamline &amp; PSD Support</li> <li>SwissFEL Photon Science (PSD) Support</li> </ul>	Motion	Anders Sandström (ECMC, SLS 2)	Your ma	X01DA	Debye 🗷	Adam Clark	Stephan Hitz	Alvin Acerbo
<ul> <li>Large Research Facilities (GFA) expirit groups Support</li> <li>Baseline Services Controls Contacts</li> </ul>		Valery Ovinnikov (TwinCAT, general motion, radiation hard motion)	Thierry	X01DC	IR 🗷	Guy Matmon 🗷	/	LukaDebenjak
Disentie Services Controls Connects			Draguti SLS 2)	X02DA	s- <u>TOMCAT</u>	Marco Stampanoni 🗷	Gordan Mikuljan	TineCelcer



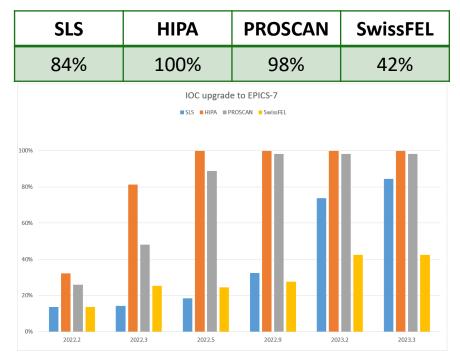
### Controls in Numbers: Operational Infrastructure

- 6(+1) Facilities (Cryo, ESI, HIPA, Proscan, SwissFEL, SLS(2))
- 28 Beamline/Endstation Subnets
- 477 VM's on GFA cluster
- 657 RHEL7 systems
- 63 RHEL8 systems (ESI platform IOC's already migrated)
- 41 WinSRV2016 systems (39 CamSRV, 2 Beckhoff Twincat)
- 18 WinSRV2019 systems (13 CamSRV, 5 Beckhoff TwinCat)
- 7 Win7/Win10 desktop systems (not ideal) (4 MX, 2 TOMCAT, 1 test)



## Controls in Numbers: EPICS 7 at PSI

- Major endeavor to migrate from EPICS 3.14 to EPICS 7 across all facilities (EPICS base, drivers etc)
- In total 1191 of 1995 IOCs (60%) are upgraded to EPICS 7
- EPICS 7 will be the only version used after the SLS 2 Dark Time
- New: 107 SF PowerBrick IOCs migrated! SF = 51% migrated



Slide: E.Zimoch. Numbers are provided by D. Zimoch after each SLS shutdown



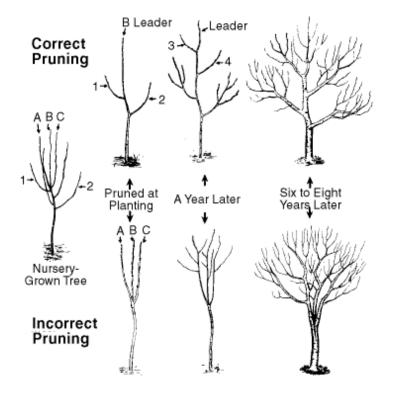
- Finalize transition to EPICS 7
- Encourage and support RHEL8 migration
- Prepare for RHEL9 impact
- General life cycle management
- Prepare for SLS2 (steep ramp up in 2024)
- Increase monitoring of our systems for preventative and proactive measures
- Unify backend services (archiver, data and image buffer backends into one)
- Recruitment
- 2022: 4 vacancies, 2 retirements
- 2023: 4 positions filled, 2 remain
- 2024: +3 retirements



• Seek strategic collaboration and partnership with AIT and AWI, increase exchange



#### Pruning Policy – Controls' Priorities



- Running facilities, including beamlines/endstations (as-is)
- 2) Deliver on PSI committed projects: SLS 2, IMPACT
- 3) Everything else, even split between:
  - Deliver on already committed needs
- Internal maintenance and development for long term sustainability and benefit for everyone
   Heavily reduced commitment to new requests – we need to find a sustainable balance

Goal: a sustainable work load



# Questions?