1) System of databases for data and metadata Center-specific auxiliary DBs FacilityID,... User managemen Proposal system CampaignID, ProposalID

- · Implement databases step by step and learn workflows

Example: Laserdata Importer Tool

- HZDR's laserdata importer tool extracts data encoded in file locations and names through customizable schemas
 - Uses fuzzywuzzy to address inconsistencies in names vs. schemas
- Information is saved as a SQLite file but other formats are possible
- Developed a SciCat extension to enable prototype upload of specified ranges of ID's coupled with their metadata

· User interfaces for databases to enter data

select existing data where possibly

· User interfaces and stand-alone agents to

· Produce, consume and modify metadata

Created a prototype Tkinter GUI as

(connecting the isolated subsystem

Draco Laser produces metadata and uses

managing interface on gateway computer

networks) to monitor and test messaging

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Example: Draco Laser Shot Counter

zeroMQ message queue

and to modify counter value

Connected to other databases to simply

2) Management software layer

· Control metadata flow

Toward coherent and controlled data/metadata flow at Laser Particle Acceleration

Hans-Peter Schlenvoigt, Kristin Tippey, Stefan Bock, Wolfgang Horn, David Pape, Oliver Knodel

Current improvements and additions to status quo

· Databases on several levels and scopes

Databases specific to instrument and workflow

- - -Facility-speci auxiliary DB List of Samples List of Diagnostics

IT resources

Training & Safety

Labbook

ELN

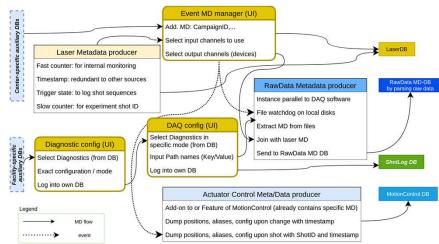
UserIDs ORCIDs

Timeframe

Diagnostics

Samples

UserRoles (Access-IDs)



LaserD

FastID (internal)

ShotID (on shots)

Analyzed values

DiagnosticName

Filename, Path

Datetime

Raw images (some)

Timestamn

Transition towards SCADA frameworks

- · Long-term effort, center-wide coordination for synergy effects
- Control Data in own database → include in upcoming DB system
- Data can be stored at local file system level (as in existing system)
- · Flexible, intuitive GUIs and rich hardware support important
- Include where possible







HZDR · Laser Particle Acceleration Division Kristin Tippey, PhD· k.tippey@hzdr.de · www.hzdr.de

ShotLog DE

Selected Laser Parameter

Selected Exp Parameters

High-Level MD

Shot-Level MD

Selected Sample

Active Diagnostics

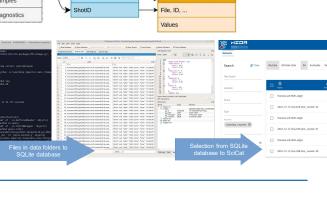
Immediate Readouts

Comments, Reasonings

Online analysis

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HELMHOLTZ ZENTRUM



DRESDEN ROSSENDORF

Timestamp

Values

Timestamp

Values

ShotID if applicable

Assignments, Names, .

Source: monitoring, internal trigger, shot