Integrated Data Workflow using HELIPORT at TELBE

MT DMA

HZDR HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF

LABVIEW

- Data acquisition LABVIEW
- TELBE
- HPC - HEMERA
- MetaData Management HELIPORT
- UNICORE WorkFLOW

Project Achievements

- HELIPORT Prototype with Unicore Integration and first system plugins deployed on HZDR Infrastructure for TELBE Experiment
- Presentations of the HELIPORT idea at workshops: LaserLab Europe, P-RECS, LEAPS IP, ExPaNDS, ...
- Data publications of prototype and project metadata.

Work In Progress

- Discussions on specific metadata support (TELBE)
- User Authentication using LDAP/HelmholtzAAI
- Full integration in to HELIPORT

HELIPORT HELmholtz ScIentific Project WORkflow PlaTform

UNICORE WorkFLOW

```
"Executable": "python3",
"RunUserPrecommandOnLoginNode": "false",
"User precommand": "module load python",          Job Description
"Arguments": ["Data_sorting_cluster.py", "sorting",
"<PATH>", "-p", "<PARAMS>"],
"Resources": "Queue": "defq", "Runtime": 10
```
data transfer to and from cluster
```
"Imports": [ { "From": "https://unicore-gate.fz-rossendorf.de:8080/HEMERA/rest/core/storages/Home
              /files/telbe-sorting-binning/src/params.json", "To": "params.json" }
            { "From": "https://unicore-gate.fz-rossendorf.de:8080/HEMERA/rest/core/storages/Home
              /files/telbe-sorting-binning/src/Data_sorting_cluster.py", "To": "Data_sorting_cluster.py" } ]
"Exports": [ { "From": "stdout",
               "To": "https://unicore-gate.fz-rossendorf.de:8080/HEMERA/rest/core/storages/Home/files/job.out" } ]
```

Stage 1 : Data Acquisition at TELBE | UNICORE Workflow

- Data acquisition using LABVIEW on local computer at TELBE
- Metadata on sensors acquired during the experiment
- UNICORE workflow assembly from templates
- Job dispatch

DOI 10.5281/zenodo.7054583

Stage 2 : UNICORE Job Execution on HPC-HEMERA

UNICORE Gateway	UNICORE X Server
UNICORE TSI	HPC-HEMERA

- UNICORE job processed by UNICORE Gateway and X Server
- User Authentication via LDAP or OIDC
- UNICORE job execution by UNICORE TSI as Slurm job

Stage 3 : Metadata Management by HELIPORT

- UNICORE Job triggers metadata acquisition by HELIPORT
- Overview of processed workflows
- Status and Restart options

HZDR: Lokamani, Martin Voigt, David Pape, Thomas Gruber, Jeffrey Kelling, Jan-Christoph Deinert, Stefan Mueller, Oliver Knodel and Guido Juckeland

Funded by: **<HMC>** HELMHOLTZ METADATA COLLABORATION   **HELMHOLTZ** RESEARCH FOR GRAND CHALLENGES