CS Workshop

25. - 28. April 2023

Welcome

Agenda

- Welcome to all attendees
- List of attendees
  - Please sign the list.
  - Who wants to join dinner tonight? Please mark in list.
  - Proposals for the other evenings?
    - Pizza in Kantine, Restaurant nearby, other ideas?
  - Conference photo? When and where?
- Agenda
  - Refer to wiki or GSI calendar
    - https://wiki.gsi.de/CSframework/CsWorkshopApril2023
    - https://indico.gsi.de/event/17490/timetable/#20230425

Important discussions

- Recent experience with LabVIEW and support?
- NI Software Licensing
  - Enterprise Agreement?
  - Permanent or Subscription?
  - Fallback? Freeze? Which version?
- Development, Maintenance & Migration
  - Where to go?
  - Common effort on developing/customizing a set of tools based on Open Source?
  - Existing Framework or something new?
  - Give up on collaboration due to divergent requirements?

What’s the future beyond LabVIEW?

- During this workshop we want to get some orientation.
- Which other suitable frameworks are available?
  - EPICS: Projects, already in use at GSI/FAIR
  - FESA @ CERN / GSI
    - Probably not for Experiments in our community.
  - Out of GSI/FAIR scope:
    - TANGO: Projects
    - TINE, DOOCS (DESY accellerators)
  - Python based fameworks (next slide)

Python based Frameworks

- Python is widely used and some suitible frameworks are available. Following a selection found by D. Neidherr:
  - Pykka provides a library with an actor model similar to NI Actor Framework.
    - Easy to use.
    - Evaluation project:
      - VacuumHeatingSystem based on PyAcdaq based on pykka is a real wolrd project to learn about Python utilizing:
      - NI PXIe-DAQmx Hardware, **nidaqmx**, numpy, pandas, simpful (fuzzy), **paho-mqtt**, logging, matplotlib, tkinter
  - Thespian *is a Python library providing a framework for developing concurrent, distributed, fault tolerant applications.*
    - Complex, scalbale at first glance. Not jet evaluated.
  - PyMeasure *makes scientific measurements easy to set up and run.*
    - *The package contains a repository of instrument classes and a system for running experiment procedures, which provides graphical interfaces for graphing live data and managing queues of experiments.*
    - *It's mayby sufficient for many applications.*
    - *Definitely an inspiration and source for own design ideas.*

CS Workshop 2025 – 20th Annniversary

- Will the CS collaboration survive until then?
- What kind of collaboration do we strive for?
  - Active collaborative development?
  - Loose coupling and exchange of experience?
  - Giving up on collaboration?