

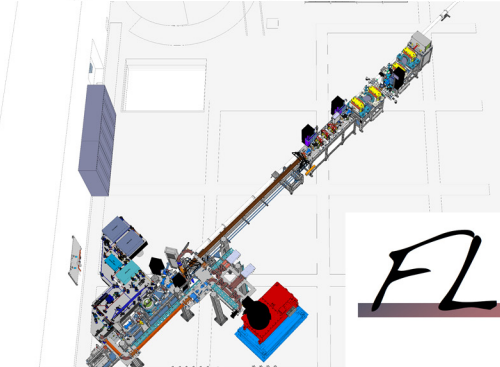
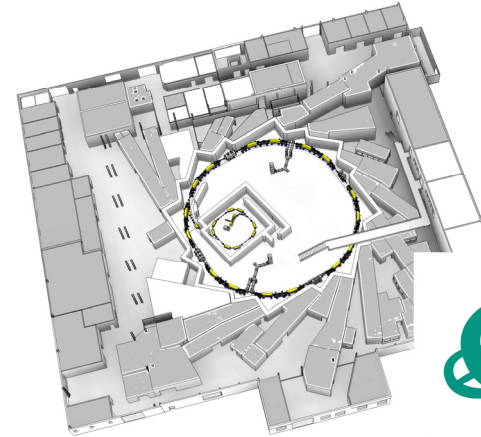
Simple Python Interface to Facility-specific Infrastructure

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Multiple accelerators

- KARA
 - FLUTE
 - Furthers to come
-
- Similar infrastructure, *but*
 - Different features
 - Different settings
 - Different “namespaces”



The Python packages

Approach: Wrap accelerator specific interfaces with coherent, accessible and maintainable Python libraries.

Simple Python wrapper

IT-Infra.

Accelerators

```
from lbpt import accelerator
from lbpt.accelerator import kara
from lbpt.epics import get_pv
from lbpt.pvs import get_pv_string
from lbpt.utils.network import is_internal_network
```

```
if is_internal_network():
    energy = epics.get_pv("beam_energy")
    print(f"(accelerator.get) runs with {energy} GeV")
    # -> KARA runs with 2.5 GeV
    energy_pv = get_pv_string("beam_energy")
    print(f"You can cross check it with 'caget {energy_pv}'")
    # -> You can cross check it with 'caget A:SR:BeamInfo:01:Energy'
```

```
from lbpt import accelerator
from lbpt.accelerator import flute
from lbpt.epics import get_pv
from lbpt.pvs import get_pv_string
from lbpt.utils.network import is_internal_network
```

```
if is_internal_network():
    energy = epics.get_pv("beam_energy")
    print(f"(accelerator.get) runs with {energy} GeV")
    # -> FLUTE runs with 0.05 GeV
    energy_pv = get_pv_string("beam_energy")
    print(f"You can cross check it with 'caget {energy_pv}'")
    # -> You can cross check it with 'caget F:LIN-1:BeamInfo:01:Energy'
```

```
from lbpt import accelerator
from lbpt.accelerator import kara
from lbpt.epics import get_pv
from lbpt.pvs import get_pv_string
from lbpt.utils.network import is_internal_network
```

Only control group/IT knows how to check this
Uses the correct PV for KARA
Coherent naming

```
if is_internal_network():
    energy = epics.get_pv("beam_energy")
    print(f"(accelerator.get) runs with {energy} GeV")
    # -> KARA runs with 2.5 GeV
    energy_pv = get_pv_string("beam_energy")
    print(f"You can cross check it with 'caget {energy_pv}'")
    # -> You can cross check it with 'caget A:SR:BeamInfo:01:Energy'
```

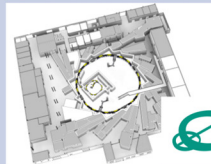
EPICS



ELOG

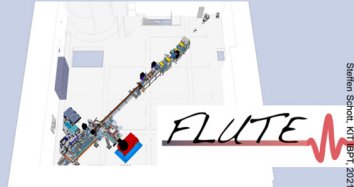


python



KARA
Karlsruhe Institute of Technology

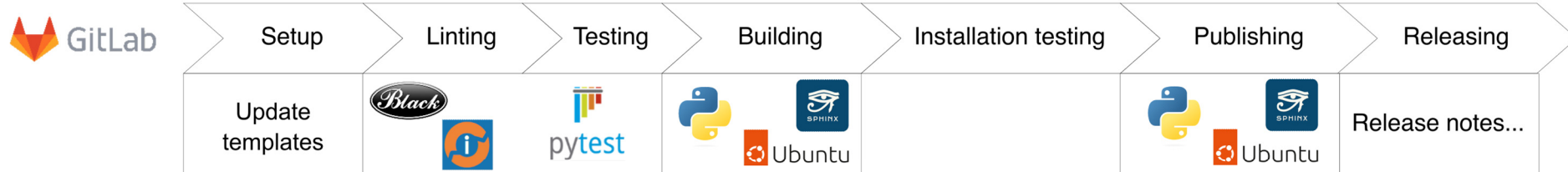
Ulrich Heidegger, KIT BPT, Nov 2017



Stefan Scholz, KIT BPT, 2021

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The development pipeline



Automate linting, testing and packaging in continuous integration pipelines and local commit-hooks.

Build packages for different use cases: pip-installable for ML workflows, apt-installable for e.g. IOC-server, and documentation as hosted web pages. Enforce your style guides **and** encourage writing good documentation with examples.

Tipps

Use one single source of truth and a testing project.

Build your own Docker images for the pipeline with pinned versions.