



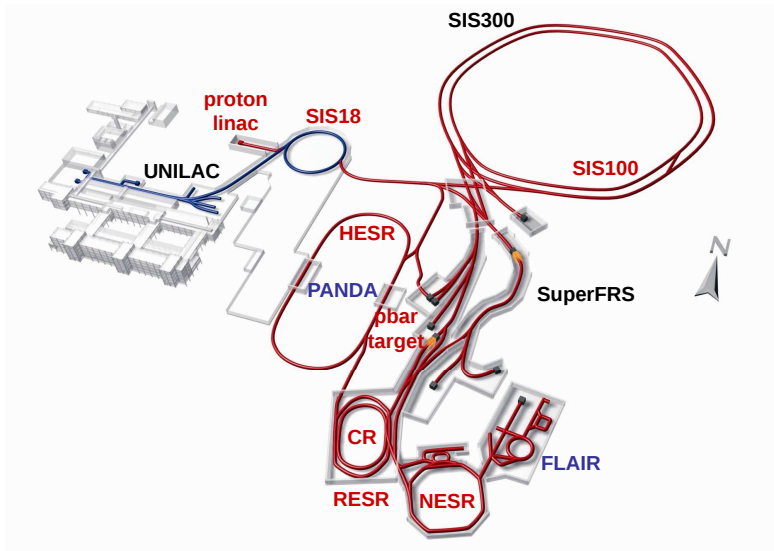
# Deployment for the PANDA Detector Control System

EPICS Collaboration Meeting, 06/06/2019

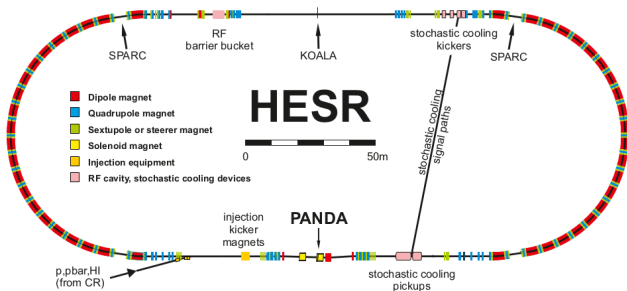
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# FAIR - Facility for Antiproton and Ion Research



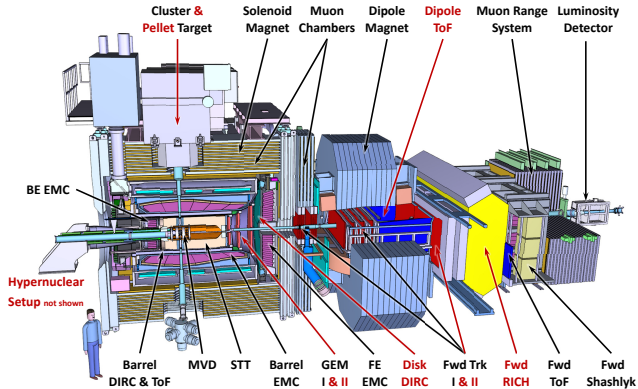
# HESR - High Energy Storage Ring



$$p_{\bar{p}} = 1.5 - 15 \text{ GeV}/c$$

	High Luminosity	High Resolution
$N_{\bar{p}}$	$10^{11}$	$10^{10}$
$\mathcal{L}$	$2 \cdot 10^{32} \text{ cm}^{-2} \text{ s}^{-1}$	$2 \cdot 10^{31} \text{ cm}^{-2} \text{ s}^{-1}$
$\Delta p/p$	$10^{-4}$	$2 \cdot 10^{-5}$

# The PANDA Detector



## PANDA physics program:

- Hadron spectroscopy
- Hadron structure
- Hadrons in medium
- Hypernuclear physics

# Challenges for the Detector Control System

- Detectors are build all over the world
- Each subsystem should develop their DCS partition
- Large diversity in used operating system at the different sites
- Large diversity in skills of “DCS-experts”
- Sub-Detectors need to start working on their control system now

# Possible Solution

⇒ Container Virtualization (e.g. docker)

- First test IOC container (asyn, autosave, calc, modbus, stream, snmp):

```
[root@lenovoT450s ~]$ docker image ls
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
ca-gateway	stretch-7.0.2	2d176f7a62ac	15 seconds ago	607MB
panda-ioc	stretch-7.0.2	fc72304d211c	2 hours ago	732MB

- Access to (hardware) serial ports, network stack, ...

```
[root@lenovoT450s ~]$ docker run --device=/dev/ttyS1 --network=host ...
```

- Additional containers planned for Archiver, CS-Studio
- Tests with hardware will be performed in July