

Swedish national synchrotron laboratory

## **MAX IV in numbers**

- 2 storage rings
- 16 beamlines
- 300 staff
- 1000 users/year
- 300 000 control points





## Controls @ MAX IV

- PID based position corrections of optical elements
- Feedforward control of the beam path
- Slow orbit feedback control
- Fast orbit feedback control
- Optics MIMO feedback control
- RF Cavities feedforward control





## Some previous student projects at MAX IV

- Energy Spread Deviation Forecasting using Predictive Maintenance
- ISARA2 Sample Changer emulator and Tango device
- Natural Language Processing analysing user feedback
- Sample centering algorithm based on ML
- Motion controller diagnostics UI with pyqt5 and python
- Monitoring for IcePAP motor controller using Prometheus/Kibana/Graphana





## PODCAST – WHAT DOES IT TAKE TO BUILD AND RUN A SYNCHROTRON?





Contact for Master's Thesis, Summer work and 20% Student positions: Mirjam.Lindberg@maxiv.lu.se and Vincent.Hardion@maxiv.lu.se

