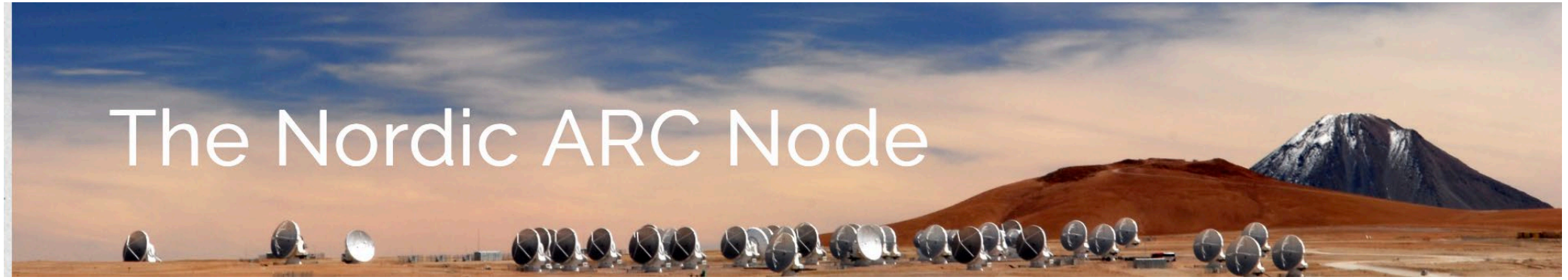
Swedish SRC Activities

John Conway

Onsala Space Observatory

Present Inteferometry Data Support in Sweden - ALMA

- Onsala hosts the Nordic ALMA Regional Centre – node (ARC-Node) – Led by Carmen Toribio - Very Active and Successful – Increasingly active in areas of archive support and developing software tools (Recent workshop in Gothenburg) also hosted this year's European Radio Interferometry School ERIS



- Involvement in EU Radionet RINGS project for advanced phase and polarisation calibration of Interferometry data, common algorithm solutions covering ALMA, VLBI, LORAR

Present Interferometry Support in Sweden –LOFAR

- Onsala hosts a LOFAR station.

- Cathy Horellou is co-leader of LOFAR Magnetism Key Science Project – Interest in effienctly making and analysing RM Synthesis cubes. Papers of reliable statistical detection work on efficient coding. Strong involvement in LOFAR EoR from Garrelt Mellema, Stockholm.

SRCSC and AENEAS Involvement

- J. Conway - Swedish member on SRCSC now – at least while in its ’political phase’

- Swedish involvement in AENEAS includes WP2 Governance – J.Conway. WP2. WP3 Computing – Stephen Bourke. WP3 – Data Transport- Simon Casey.

The Swedish Data Processing, Data Transfer and Storage Environment

- Swedish computing infrastructure for research very ’Social Democratic’ rather than ’privatised’ – a closed network of compute centres + Network (100 Gbps) organised by the Swedish Research council that one is expected to buy services from.

SNIC SUNET

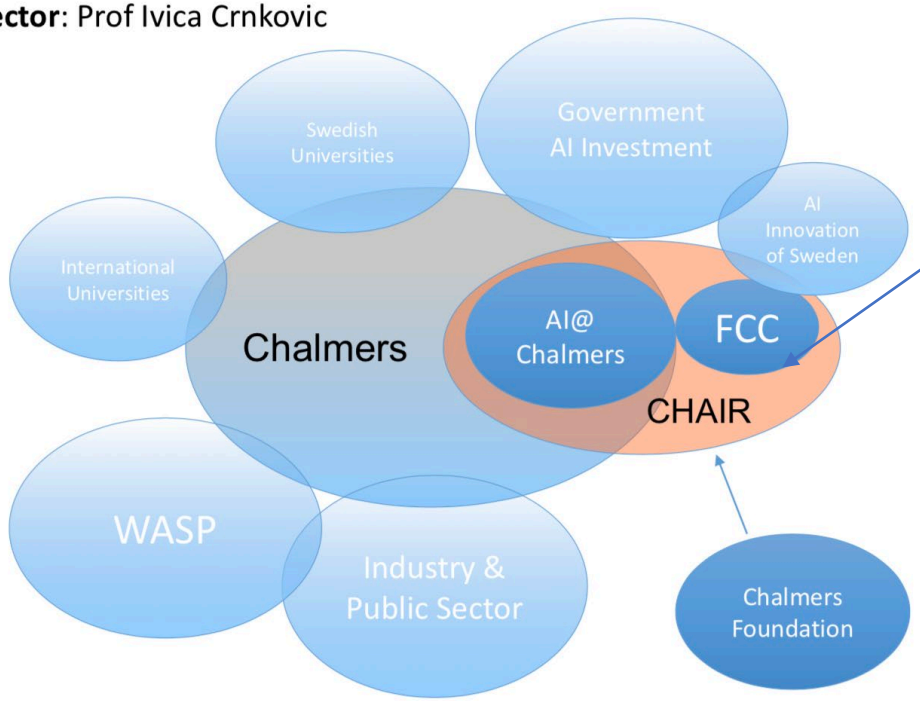
C3SE Chalmers Centre for Computational Science and Engineering

SNIC Computing Centre network in Sweden

AI/ML Initiatives at Chalmers/Sweden

Chalmers AI Research Center (CHAIR)

Director: Prof Ivica Crnkovic



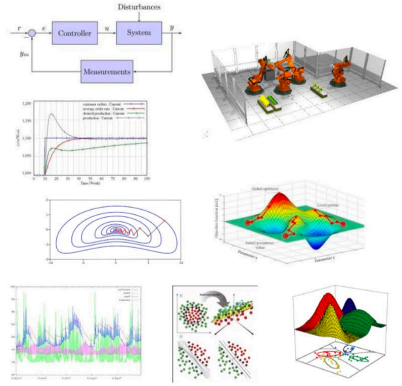
Chalmers Foundation Investment:
317 MSEK 2019-2028

Chalmers programme 39 M€ over 10 yrs, including for PhD students

FRAUNHOFER CHALMERS
RESEARCH CENTRE FOR INDUSTRIAL MATHEMATICS

APPLIED MACHINE LEARNING, AI, AND BIG DATA ANALYTICS

- Modeling
- Simulation
- Optimization
- Data Analytics



Very useful components for safe, efficient, explainable applied AI and ML

WASP | WALLENBERG AI, AUTONOMOUS SYSTEMS AND SOFTWARE PROGRAM

Funding 400 PhD students nationally in AI/ML

SKA/SRC Proposal Status in Sweden

- Submitted proposal for Swedish share of SKA construction, central operations funding and SRC in March 2019.

- All proposal for Swedish involvement in international infrastructures must also contain an estimate of all associated e-infrastructure costs, the AENEAS costings came just in time…

- Research council gave provsional approval to join SKA but so issues such as final securing of construction funding needed.

- Proposal going forward is single grant for radio astronomy (2020- 2024 or 2021-2025) covering OSO central operations, Onsala actovities and SRC – with large freedom to prioritize between these.

- Total funding of new grant up to 1 M€/yr larger that today for next 4 years.

Future Plans

- Specifc SKA development work beyond AENEAS have been limited so far but with likely Swedish decision to join SKA-Obs in early 2020 this will ramp up.

- Stongly support development of ICE structure leveraging ALMA ARC node expertise in Europé for SKA support.

- Plan to get involved in SKA Data Challenges, and stronger support for Swedish science interest in Magnetism, EoR, Transients.

- Become more active in support of LOFAR Suvey/Magnetism.

- Attempt to get ’slice of pie’ of Chalmers/Swedish AI/ML investments

- Expand 2020- 2022 local computing cluster located at Chalmers SNIC node (C3SE). From 2023 and beyond purchase computing services from whole SNIC network.
- Detail of activities will depend on exact funding level for next years which is still being discussed….