

RISE SICS Nyhetsbrev

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RISE SICS North Newsletter 2017:2



News in short

- The Swedish minister of digitalization Peter Eriksson came for a visit. He inaugurated SICS ICE module 2.
- We have had more than 400 visitors to our facility during the spring.
- Dr. Jon Summers from Leeds University is joining us as scientific leader.
- Starting in June, we are offering Tensorflow as a managed service on the Hopsworks platform.
- We have been active at Data Centre Transformation conference in Manchester and in Almedalen the Swedish political summer event.
- We are looking at new projects and applications. Areas of interest are Arctic datacenter optimizations, distributed cloud datacenters, autonomous datacenter operations, heat re-use applications and liquid cooling.

- Together with LTU we are applying to Swedish Energy Agency for both a competence center and an innovation cluster
- We are active on twitter @SICS_ICE https://twitter.com/SICS_ICE and with a LinkedIn group SICS ICE <https://www.linkedin.com/groups/8383517>

Inauguration of SICS ICE module 2 by Swedish minister

The module 2 has now been up and running for one month. The Swedish minister of digitalization Peter Eriksson came for a visit and we asked him to inaugurate the lab module. The facilities were shown to him and all the participants. The importance and use of large scale IT infrastructures in the digitalization of society and industry for IoT, 5G or data analytics were discussed.



[News about the inauguration \(in Swedish\)](#)



SICS ICE collaborations

We have had at least 400 visitors during the first half-year of 2017. There are many Nordic regions interested in attracting datacenters that are visiting. They want to know what Sweden and especially north Sweden has done to attract datacenters. The industry visitors, both vendors and datacenter operators, want to know what we could offer to them regarding knowledge, projects, testing and visibility.

The companies currently involved in projects or with equipment in the modules are Ericsson,

Vattenfall, Facebook, ABB, EON, Swegon, Siemon, Metria, Eitech, BnearIT, ArctosLabs, Netrounds, Acon, IT4U, InfoQB, Fortlax, Hydro66, Scania, PreEye, Sweco, LogicalClocks, Hi5, Dell, Nvidia, Clavister, Caverion, Hö Allbygg, Presto, Kidde, Prior-IT, Riello-Eurotech, Schleifenbauer, AP Nederland, Minkels, Raritan, Bergvik, SEECooling, Condair, and Data Center Technology. During the fall a number of new partners will be added with new projects and equipment.

[RISE SICS North web site](#)

In the news and at conferences

Josefin Hedberg represented RISE SICS North at a panel discussion in Almedalen, a Swedish politics and policymaking summer event. The panel theme was how Sweden can attract 10 times more datacenters. The initiative for the panel came from Intel Sweden. Josefin argued for the bespoke conditions in the north and the importance of intellectual infrastructure and clustering.



Tor Björn Minde was presenting at the Data Center Transformation conference in Manchester July 11. The presentation focused on what we are doing to help industry with testing and experimentation of datacenter technologies.

We were partly featured in an article in the German tech magazine Datacenter Insider. The article covered the surprise that datacenters can dwell in the Arctic.

[Article in Datacenter-Insider \(in German\)](#)

Jon Summers joins RISE SICS North as the scientific leader

Jon Summers from Leeds university has joined RISE SICS North AB to take on the role



as Scientific Leader to further strengthen the research institute's competence area, being sustainable and efficient datacenter solutions, cloud applications and data analysis. Dr Summers' area of expertise is primarily focused on energy efficiency and cooling of microelectronic systems from processors to datacenters.

Jon Summers comes with a wealth of 20+ years experience and knowledge within the datacenter and related industries, having spent the last 5 years developing a centre of excellence in engineering digital infrastructures at the University of Leeds. He has specific interest in thermal management, liquid cooling and the physical limits of computation.

[News about Jon](#)

Distributed Tensorflow-as-a-Service now available on SICS ICE

Starting this June, we are offering Tensorflow as a managed service on the Hopsworks platform, hosted at the SICS ICE research datacenter facility in Luleå.

Hopsworks supports the execution of managed Tensorflow programs written in Python (or PySpark) on any available number of GPUs. Tensorflow programs can be run as Jupyter notebooks or ApacheZeppelin notebooks or directly as python programs. Distributed Tensorflow is also supported as both native Tensorflow-on-YARN and Tensorflow-on-YARN.



The SICS HOPS team has received the prize IEEE Scale 2017 for the most scalable system. We are a proud side contributor with hardware and a datacenter where they have been able to test and prove the performance.

News about Tensorflow



Current projects

Currently we are running four larger projects in addition to the facility development project SICS ICE and a few smaller studies. The four projects, from the bottom of the stack to the top, are DMI – Datacenter Micro-grid Integration, SENDATE-EXTEND – holistic datacenter automation, DRAFT – Datacenter Research on Airflow Technologies and D-ICE – Data-driven lab on ICE.

- DMI is the project we work with LTU, Vattenfall, EON, ABB, Ericsson and Acon to study how a datacenter with its own micro-grid can be integrated with the local smart grid.
- SENDATE-EXTEND is the project where we take a holistic approach to automation together with ABB, Ericsson, Swegon, Metria, Eitech, KTH, LTU, ArctosLabs, Netrounds and BnearIT. To achieve shared policies, targets and measurements we need data collection across the datacenter and sharing of data between the silos in the datacenter.
- DRAFT, with SEECooling, Siemon and Swegon as stakeholders, looks at airflow technics in the datacenter both with simulations and experiments. The goal is to minimize the fan energy use.
- D-ICE finally is where we together with Ericsson and LogicalClocks try to enable the industry to use advanced data analytics. We facilitate a software and hardware environment and a networking activity. The first on-boarded company is Scania with their truck data.

We at RISE SICS North work closely together with Luleå University of Technology (LTU) and the different research teams. Many projects are manned by both LTU and SICS combining the strength of research, facility experiments and industry collaborations. We support one of their regional fund projects DC-FUI with test & experimental resources.

[Link to the FUI project web site](#)

Future projects open for collaboration

We are also working on many new project applications and collaborations. One area is datacenters optimized for the Arctic. We have two project applications in the works. We have one project application with international partners and one project with Arctic partners.



The next area is liquid cooling both for better cooling performance, but also to enable better heat re-use. Jon Summers will be instrumental in these project applications. There we are looking for partners. We think of both National and European projects.

Another area of interest is distributed cloud with modular design and autonomous operations. This is also an area where we are looking for industry partners. We will apply for European collaboration funds like Celtic-plus, ITEA, H2020 to fund the projects where we can develop new technologies.

Two main applications in the works together with LTU are for funding by Swedish Energy Agency. One application is for a national competence center that is for more basic research by PhD students in all areas of the datacenter with energy efficiency as the theme. Another application is for a national innovation cluster in the datacenter sector to enable great ideas to grow into proven innovations. Both are open for collaborations and industry participation.

[Current projects at RISE SICS North](#)

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