

ACCELERATING INNOVATION!

Olof Sandberg

March 2017

Research Institutes of Sweden
Technology



Our vision

An internationally leading innovation partner



RISE Mission from the Swedish Government

- "Develop excellence in strategic areas of importance for the transformation of industry and the business world and in close cooperation with academia and industry"
- "Develop and promote the usage of leading, dynamic environments for testing, demonstration and pilot production."
- "Promote companies, in particular SME:s to participate and benefit from participation in EU research programmes"

Excerpts from the Research Bill 2016/17: 50 (Kunskap i samverkan).



Building a strong, unified, institute sector for Sweden

- Sweden needs a strong national innovation capacity to meet international competition of jobs and welfare and to meet global challenges.
- The new RISE aims at building a stronger Swedish RTO-sector that can deliver increased benefit for industry and society as a whole.



Three have become one - RISE

The RISE RTO:s Innventia, SP and Swedish ICT have merged in order to be a stronger research and innovation partner for businesses and society.







RISE Research Institutes of Sweden







Facts about **RISE**

- Comprised of research and technology organisations: SP Sveriges Tekniska forskningsinstitut, Swedish ICT and Innventia. RISE also owns Swerea to 43 %.
- 2016 RISE had a turnover of 3,2 billion SEK, of which 55 % came from industry, and 28 % from public funding in competition (including national and EU funding)
- 2 200 employees, 30 % with a PhD (2 500 with Swerea)
- SME clients responsible for approx. 30 %
- Run 100s of test and demonstration facilities, open for industry, SMEs, universities and institutes (RISE is owner and partner in 60 % of all Swedens T&D-facilities)

Breakdown of turnover





We are present all over Sweden. And a bit more.



Our combined offer

- Applied Research and Development
 - Research and Innovation
 - Expert consultation
 - Service design and design processes
 - Innovationsupport for SME:s
- Industrialization and Verification
 - Testbeds and demonstration facilities
 - Technical assessments and verification
 - Prototypes and pilot line production
- Quality Assurance
 - Certification



RISE Focus Areas

23 "Lighthouse initiatives"

- national excellence
- international potential
- critical mass,
- existing customers and partner relations.
- Examples:
 - cellulose based societies
 - organic electronics (BioComLab)
 - the circular economy
 - intelligent energy systems.



RISE Business & Innovationsareas

Mobility

Energy and Biobased Economy

Life Science

Digitalization

Sustainable Cities and Communities



Collaboration – RISE stories

LET'S PUT OUR HEADS TOGETHER. TO KEEP AHEAD.







Smart clothing for care of neurological disease for patients in their homes

Challenge

60 000 Swedes are diagnosed with Epilepsy and 20 000 suffer from Parkinson. This group of chronic patients need regular care and treatment.

Solution

A comfortable, washable and smart garment with in-built sensors to continually monitor movement, heart status etc



Smart clothing for care of neurological disease for patients in their homes

Goal

To improve diagnostics and treatment of patients in their homes to increase quality of life for those with neurological complaints.

Research partners

RISE ICT (Acreo), Swerea IVF, Textilhögskolan i Borås, Sahlgrenska akademin, Göteborgs universitet.



Testbed project with Vinnova

Strategy:

- 1. Development a common offer for access to RISE testbeds; focus SME and universities
- 2. Identify pilot projects at testbeds to implement offer
- **3**. Establish a Test & Demo-forum



Target position at end of project

Testbeds play an important role in innovation process if:

- New users participate
- Existing users use the facilities more
- End users are involved
- Knowledge about testbeds widely known
- Esablished processes for the use of testbeds, eg IP
- Tesbeds are sustainably financed



Production incubator





- Testbäddar och demonstratorer för fiberoptik och tryckt elektronik baserade Myfab modellen.
- Förenklar och stödjer integration av fotonik, tryckt elektronik, mikro- och nanoteknik i tjänster och produkter
- Gemensamma metoder, verktyg och modeller ex v bokning, IPR, kvalite'
- Stöd för SIO "Smarta elektroniksystem"
- Fokus på företag och SMF
- 5 pilotanvändare med stöd av företagscheckar



Från Etanol...till Biorefinery Demo Plant



Bredda användningen:

- Foder, kemikalier, material
- Nya koncept

Ny kundkrets

- *SMF, UoH, institut, internationellt*
- Nytt nätverk
- Finansierings-

modeller:

- Nyttja olika delar av anläggningen
- Parallella försök

IPR, kvalitet

Utbyte via erfarenhets forum

> RI. SE

RISE collaboration with MAX IV and ESS – Becoming a facilitator for industry



Background - Unique synergy between MAX IV and ESS



X-rays and Neutrons emphasize different elements and structural information



Roadmap project group

RISE

- <u>Claes Holmkvist</u>, RISE Bioeconomy
- Niklas Lorén, RISE Bioscience & materials
- Jenny Rissler, RISE Bioscience & materials
- Kristian Storm, Acreo RISE ICT
- Fredrik Lindberg, Swerea

With support from / discussion with

- Magnus Larsson and Tomas Lundkvist, MAX IV
- Andrew Jackson and Sindra Pettersson Årsköld, ESS
- Olof Sandberg, RISE



Purposes and goals with setting up the Roadmap

Purpose

- Strenghten the competitiveness of Swedish industry
- Help industry to get the most out of the infrastructures at MAX IV and ESS
- Strengthen the applied research at RISE (and MAX IV and ESS)

Goals

- Establish a plan for how RISE in the most efficient way can work with MAX IV and ESS
- Sort out how RISE shall structure its work with MAX IV and ESS to support industry and perform leading applied research



The "Scattering/Spallation" Eco-system





Implementation of the roadmap – Action Plan

The implement the Roadmap has started, 2 MSEK has been set aside, a working group has been formed working with:

Competence building	Reaching industry	Integration MAX IV / ESS
 Survey existing RISE competence Information material Training of key scientists and project leaders RISE user community Funds for beam time 	 Advertise MAX IV / ESS collaboration on RISE web Organize workshops Case studies & reference material Training R&D staff Strategic Research Agendas 	 Establish RISE presence at MAX IV/ESS facilities Pinpoint relevant techniques Pre-study to investigate potential investment in facilities

Activities

- RISE user comunity
- Collaboration MAX IV/ESS researchers
- Training
- Project ideas
 - Materials for energy (PV) and light weight
 - Formulation new antibiotics
 - Thickener in food
 - Modification of wood fibres

A few examples

EU-project FORMAMP

Nanoformulation of antimicrobial peptides-How can SAXS be used for characterization?



Helena Bysell (Ph D, Project Manager) SP Chemistry, Materials and Surfaces- Life Science





www.formampproject.com





SP Technical Research Institute of Sweden



The research in FORMAMP receives funding from the European Union's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 604182. http://ec.europa.eu/research



Damage mechanisms in SiMo ductile irons

Partners

1.0.7

- Scania CV AB
- Swerea/Swerea|SWECAST
- Lunds University
- MAX IV/ESS
- SP Technical Research Institute of Sweden



SP Technical Research Institute of Sweden







RISE Data Science

- National initiativ for computerdriven innovation in Sweden
- Combines all relevant experts and competences in RISE
- Common activities and R&D projects
- Goal: Contribute to give Sweden top position in digitalisation







LUNDS UNIVERSITET



PRONANO

NANOPRODUCTS FOR THE FUTURE

Stefan Adolfsson

2017-03-06

Research Institutes of Sweden

What will ProNano look like?



<u>Services</u>

- Rental of office space (2000m²)
- Rental of cleanroom space (2100m²)
- Rental of Assembly and packing space (1000m²)
- Rental of metrology equipment
- Rental of metrology services
- Rental of process equipment
- Rental of process services



Contact persons in RISE

- <u>Claes.holmqvist@ri.se</u>
- Niklas.loren@ri.se
- Jenny.rissler@ri.se
- <u>Stefan.adolfsson@ri.se</u>



THANK YOU

Olof Sandberg

Olof.sandberg

010 -

Research Institutes of Sweden

DIVISION ENHET

