







Innovate with Big Science



Programme

09:00	Introduction Anna Hall Director Big Science Sweden	
09:20	CERN Knowledge Transfer Han Hubert Dols Head of Business Development Section at CERN	
09:40	FAIR Technology Transfer Dr. Martina Bauer Innovation Manager GSI	
10:00	Coffee and networking	
10:20	ESS Innovation Programme Jimmy Binderup Andersen Head of Innovation and Industry at ESS	
10:50	F4E Technology Transfer Carmen Casteras Intellectual Property & Tech Transfer Officer at F4E	
11:10	Industrial innovation through data ecosystems Per Runeson Professor of Software Engineering, Lund University	

Welcome everybody!

EXAMEC

nVent
SCHROFF



**FUSION
FOR
ENERGY**



EUROPEAN
SPALLATION
SOURCE



FAIR

X Exir
Broadcasting
YOUR PARTNER FOR PASSIVE RF COMPONENTS

LUMA METALL
Fine Wire Products

HALDOR TOPSØE

RFR SOLUTIONS
Stainless Steel Excellence



UPPSALA
UNIVERSITET



LUND UNIVERSITY



Habia Cable

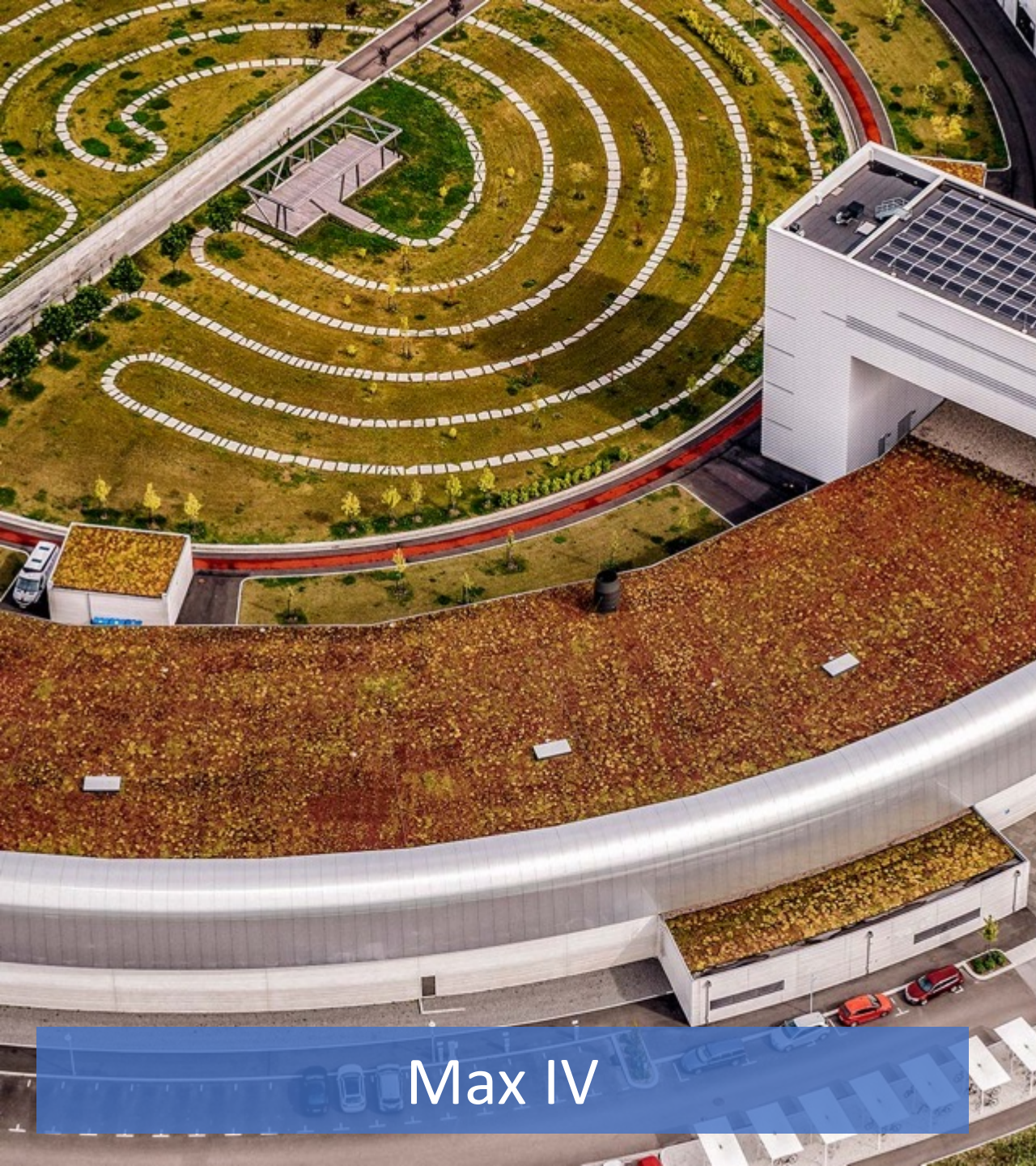


REGION
SKÅNE



HÖGSKOLAN VÄST





Max IV



ESS

Particle Accelerators



CERN, ESS, MAX IV, ESRF, ILL, ISIS, XFEL, DESY, FAIR

Fusion

ITER
DONES



Space

ESO, SKA, EISCAT



Funded by:



Swedish
Research
Council

Big Science Sweden is led by a consortium:



CHALMERS



UPPSALA
UNIVERSITET



LUNDS
UNIVERSITET



Teknikföretagen



INDUSTRIELLA UTVECKLINGSCENTRA
IUC SYD



Join us in driving Big Science Technology

The Official Swedish ILO • Business and Innovation



Big Science Sweden

Directors



Anna Hall
Director Big Science Sweden
Industrial Liaison Officer (ILO):
CERN, ESS, MAX IV, FAIR
Purchasing advisor: ESSRF, ILL
Contact point: ISIS, DESY, XFEL



Patrik Carlsson
Co-Director Big Science Sweden
Industrial Liaison Officer (ILO): ITER,
ESO, SKA

Göteborg



Sven-Christen Ebenhag
Business Development &
Project Management



Håkan Nilsson
Business Development &
Project Management



Julia Hellström
Business Development &
Project Management
FÖRALDRARLEDIG



Carin Eklof-Österberg
Business Development &
Project Management

Lund



Frida Tibblin Citron
Business Development &
Project Management



Lennart Gisselsson
Business Development &
Project Management



Mike Olsson
Business Development &
Project Management



Cajsa Fredlund
Communication Manager



Ingela Bogen
Communication Officer



Kiruna/Luleå



Adam Wikström
Business Development &
Project Management



Ekaterina Ostrova
Business Development & Project
Management
Research Advisor



Lars-Åke Isaksson
Business Development &
Project Management

Uppsala



Fredrik Engelmarm
Business Development &
Project Management
Industrial Liaison Officer
(ILO): CERN



Ernesto Gutiérrez
Business Development &
Project Management



Three Technology Groups building capacity



Strategic coordination

1. Technology group 1

TEAM: Håkan Nilsson, Frida Tibblin Citron

1. Civil engineering, building and technical services
2. Electrical engineering and magnets
9. Gases, chemicals, waste collection and radiation equipment
10. Health, safety and environment

2. Technology group 2

TEAM: Sven-Christen Ebenhag, Mike Olsson, Lars-Åke Isaksson

3. Electronics and radio frequency
4. Information technology
8. Optics and photonics

3. Technology group 3

TEAM: Fredrik Engelmarm, Adam Wikström, Mike Olsson

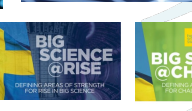
5. Mechanical Engineering and raw materials
6. Vacuum and low temperature
7. Particle and photon detectors



EVERY WEDNESDAY MORNING
10-10.30 • JOIN US

**BUSINESS
CORNER**

The Swedish Guide
Big Science Suppliers and Partners • 2020



FINANCIAL RISK MANAGEMENT IN BIG SCIENCE BUSINESS

BIG SCIENCE
MORNING

DISCOVERY DAY INNOVATE WITH CERN



FAIR AT BIG SCIENCE MORNING

REMOTE HANDLING AND
BUSINESS OPPORTUNITIES

REMOTE ITER BUSINESS MEETING



STEP BY STEP BIG SCIENCE PROCUREMENTS

BECOME A CERN SUPPLIER

COMMERCIAL AND INDUSTRIAL
POSSIBILITIES OF EPICS



BIG SCIENCE SWEDEN CONFERENCE 2020

JOIN US IN BUILDING
THE BIG SCIENCE ECOSYSTEM
VIRTUAL CONFERENCE
NOVEMBER 24, 2020

ACADEMIC INFRASTRUCTURES FOR INDUSTRIAL DEVELOPMENT

Focused Technical
Workshop

CARBON FIBRE

FOCUSED TECHNICAL WORKSHOP
REMOTE HANDLING



DATA HANDLING BIG SCIENCE MORNING

BIG SCIENCE @LU

DEFINING AREAS OF STRENGTH
FOR LU IN BIG SCIENCE



BIG SCIENCE @RISE

DEFINING AREAS OF STRENGTH
FOR RISE IN BIG SCIENCE



BIG SCIENCE @CHALMERS

DEFINING AREAS OF STRENGTH
FOR CHALMERS IN BIG SCIENCE



BIG SCIENCE @LTU

DEFINING AREAS OF STRENGTH
FOR LTU IN BIG SCIENCE



PhotonicSweden
The Swedish Technology Platform in Optics and Photonics

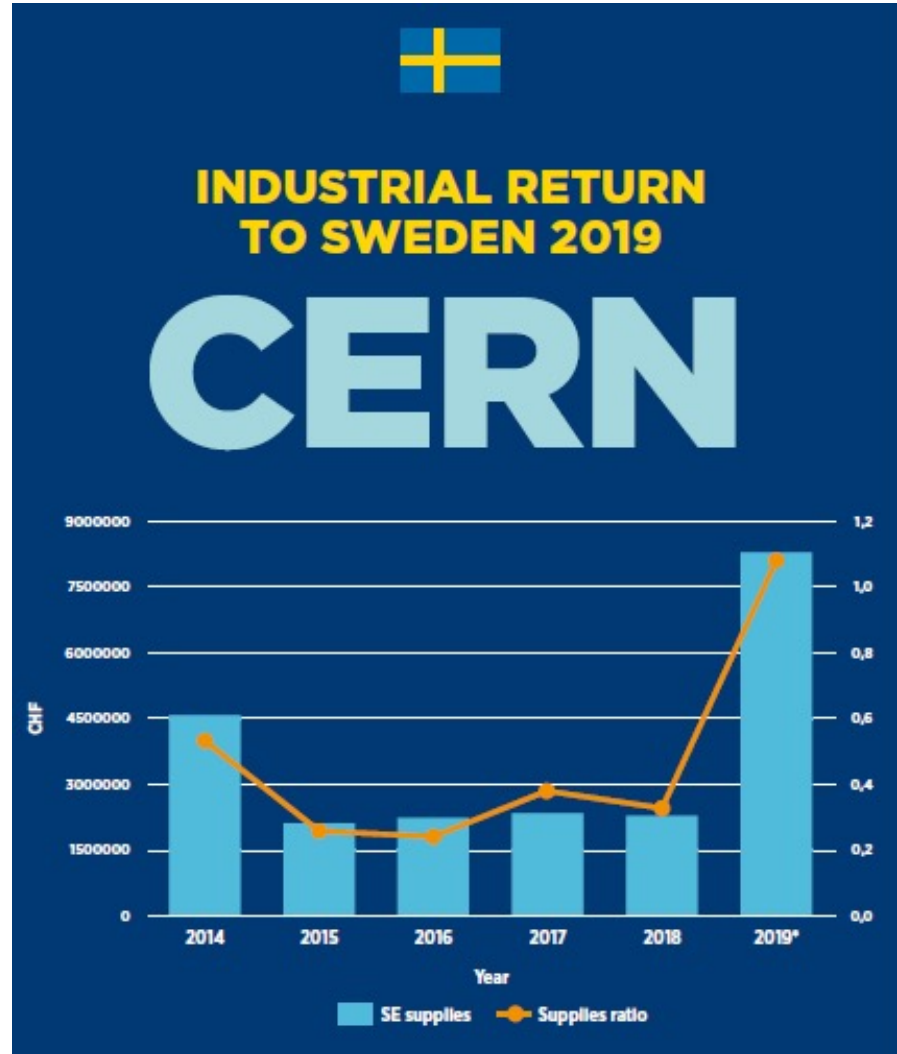
Welcome to an **Optopub Webinar!**

Thursday, 25th March 2021, 16.00 – 17.00 (CET)

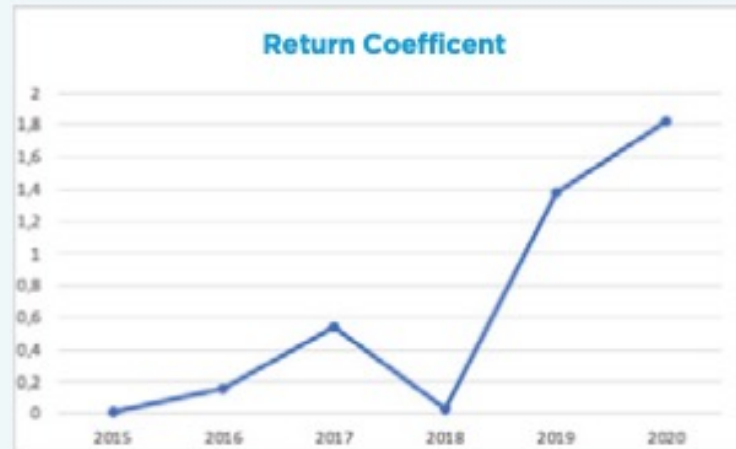
PhotonicSweden & Big Science Sweden have the pleasure to invite you to an
Optopub Zoom-Webinar – Free of charge



Big Science Sweden results 2018 - 2020



INDUSTRIAL RETURN TO SWEDEN 2020 ESO



The Swedish Return Coefficient based on commitments has steadily increased at ESO. However, during the years of large investments around 2016, Sweden was not in a position to participate. The amount committed to Swedish companies 2020 was EUR 2701 thousand, and the return coefficient based on commitments was 1.82 (1 = return is equal to investment).

SWEDISH BIG SCIENCE ORDERS

250 million SEK

Amount of orders over the first 3 year program periode. During 2020 Swedish companies won orders for around 50 million SEK. Examples of companies: ABB, AQ Elautomatik, Examec, Carlsson & Möller, GoVirtual, Luma Metall, Omnisys, Qamcom, Qtech Group, Sandvik, and Scanditronix.

Swedish potential
1 000 MSEK/y

... the main value is in the science, technology and long term competitiveness of Sweden

Big Science in Europe
Yearly investments around
78 Billion* SEK/Year

*) Big Science Business Forum 2022

DISCOVERY DAY INNOVATE WITH CERN

KNOWLEDGE
TRANSFER
COLLABORATION
PROGRAMME
SWEDEN



1. **Digital solutions for tomorrow's industry**

Industrial Controls, Machine Learning,
Analytics and Robotics

- Combient
- Goalart
- Sandvik Coromant
- Zenceact (former Zenuity)
- Saab

2. **Solutions for sustainable transportation (trains, cars, aircraft) - Magnets**

Superconductivity and Cryogenics

- GKN Aerospace
- Saab
- Volvo Cars Cooperation
- Scanditronix Magnets
- GE Healthcare

3. **Material Science – High Performance Applications in Harsh Environments**

- ABB
- Alfa Laval
- Siemens Energy
- Siemens Industrial Turbomachinery
- Techtank

KNOWLEDGE
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SWEDEN

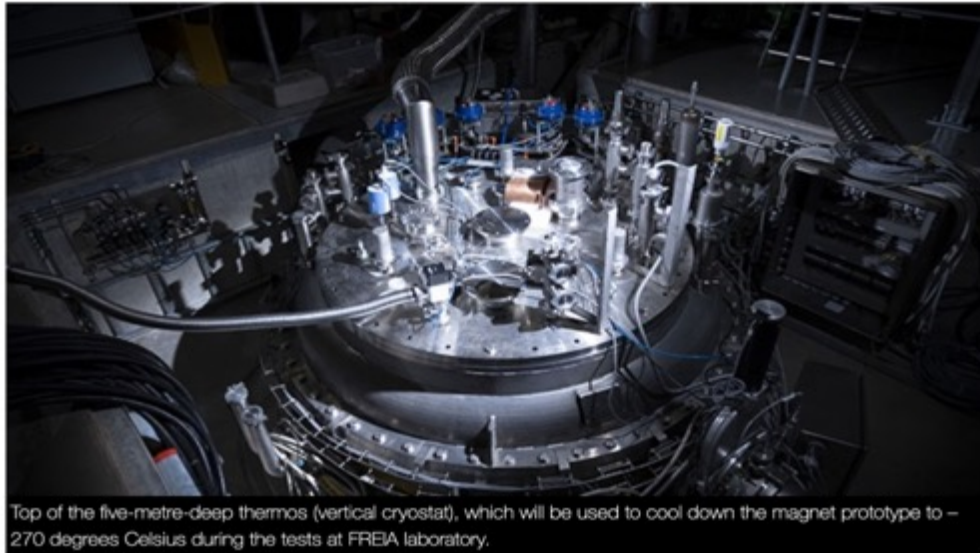


AIMday 2019

– 5 pre-studies and a 19 MSEK project

Collaboration on energy efficient cold magnets

5 February 2021



Photograph: Mikael Wallerstedt

The European Regional Structural Fund Programme for Småland and Islands and Region Kronoberg have decided to contribute to a new collaboration project with Uppsala University, Linnaeus University and a cluster of technology companies in the province of Småland. The project of SEK 19 million aims to develop energy efficient superconducting magnets where research and technical development can be combined to create global competitiveness.



BIG SCIENCE SWEDEN CONFERENCE - AIMDAY

5 Big Science
Pre Study
Projects

AIMDAY enables long-term collaborations, by sharing knowledge, presenting expertise, and gaining first-hand information about the needs of research facilities and their current and future challenges.

Exempel på projekt: Robotic arm in carbon fiber • SMES – Energy storage • CO₂-cooling down to -53°C • Developing a Swedish cluster for super conducting magnets • Drones in harsh environments.

AIMDAY BIG SCIENCE TECHNOLOGY 2021

big
science
sweden

® **AIM** DAY

13th October 2021
A number of pre-
studies are defined

Innovate with Big Science



Mentimeter question







Go to www.menti.com and use the code 2307 3217

Knowledge from research facilities can create industrial competitiveness - How do we make it happen?

 Mentimeter



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We are Sweden's official Industrial Liaison Office (ILO) and the link between Swedish industry, institutes, academia, and Big Science research facilities in which Sweden is a member.

MAX IV ESS

CERN XFEL DESY

EISCAT ILL FAIR

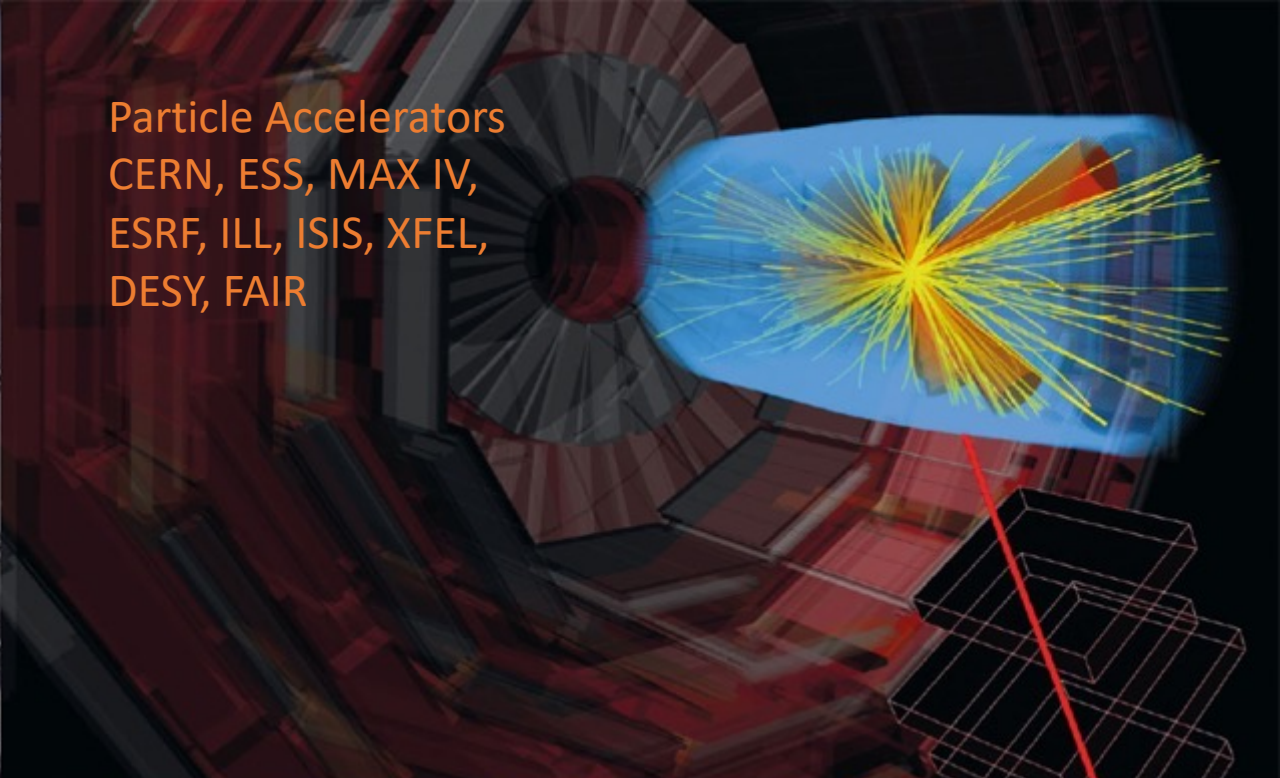
ITER DESY ESRF

ESO SKA



A detailed cross-sectional view of a fusion reactor, showing the central plasma chamber (tokamak) surrounded by complex magnetic confinement structures and various support systems.

Fusion reactors
ITER
DONES

A 3D visualization of a particle accelerator's internal structure, featuring a large circular tunnel and a central beam pipe. A bright yellow and orange starburst effect at the end of the beam pipe represents a particle collision or interaction.

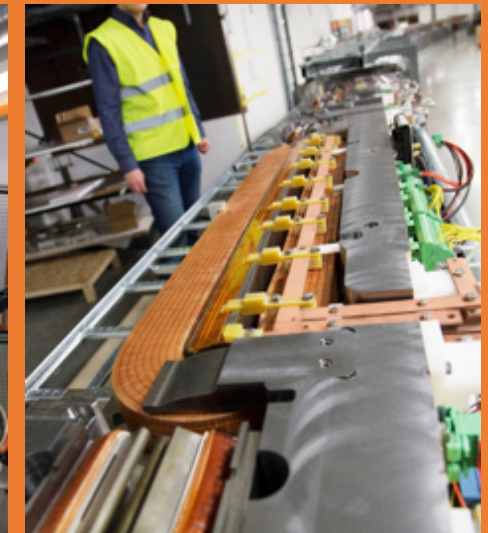
Particle Accelerators
CERN, ESS, MAX IV,
ESRF, ILL, ISIS, XFEL,
DESY, FAIR

A night sky view featuring several large radio telescope dishes (parabolic antennas) pointing towards the stars. The Milky Way galaxy is visible in the background, creating a starry backdrop.

Space research facilities
ESO, SKA, EISCAT

A range of competences needed

- Accelerator technology
- Construction and Civil Engineering
- Coating, Joining and Casting
- Electronics, RF and Microwave Technologies
- Magnets
- Materials
- Mechanical Engineering
- Optics, Sensors and Diagnostics
- Power Supply
- 3D printing
- Big Data
- AI/ML
- Data handling & Visualization
- Remote Handling
- Cryogenics
- Robotics
- Software and Control Technologies
- Utilities and Instrumentation
- Vacuum and Low Temperature Technologies



Directors



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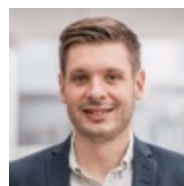
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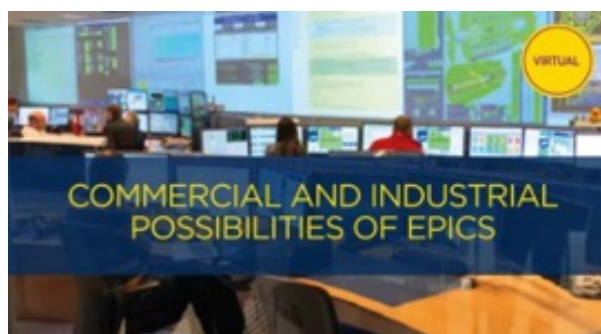
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The Swedish Guide includes presentations of 230 member companies and information about 87 Swedish academic contributions to Big Science.

big
science
sweden

The **Swedish** Guide

Big Science Suppliers and Partners • 2021



Meet our business developers and technical experts and network with other big science suppliers

- Procurement procedures
- Contact channels
- Technical specifications
- Deadlines

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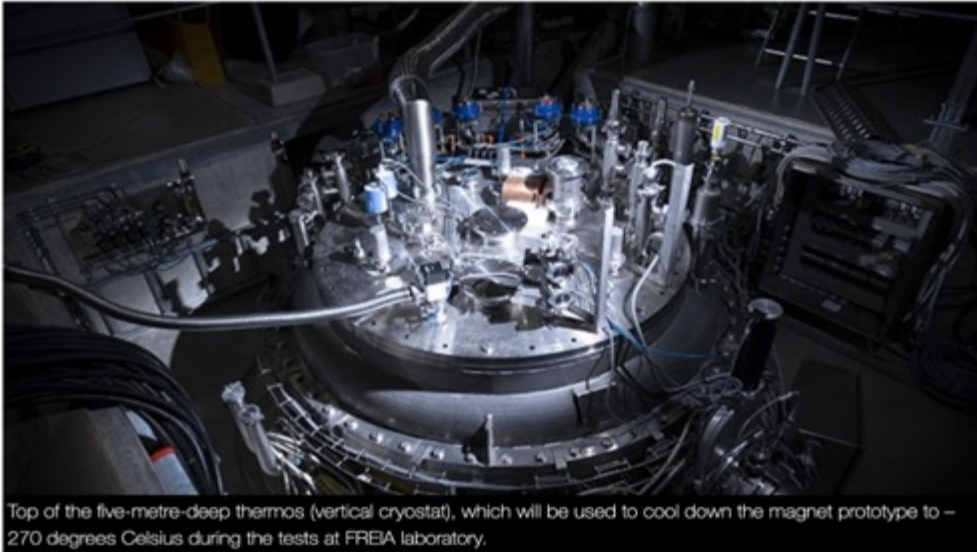
**BUSINESS
CORNER**

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BIG SCIENCE SWEDEN

THE OFFICIAL SWEDISH ILO

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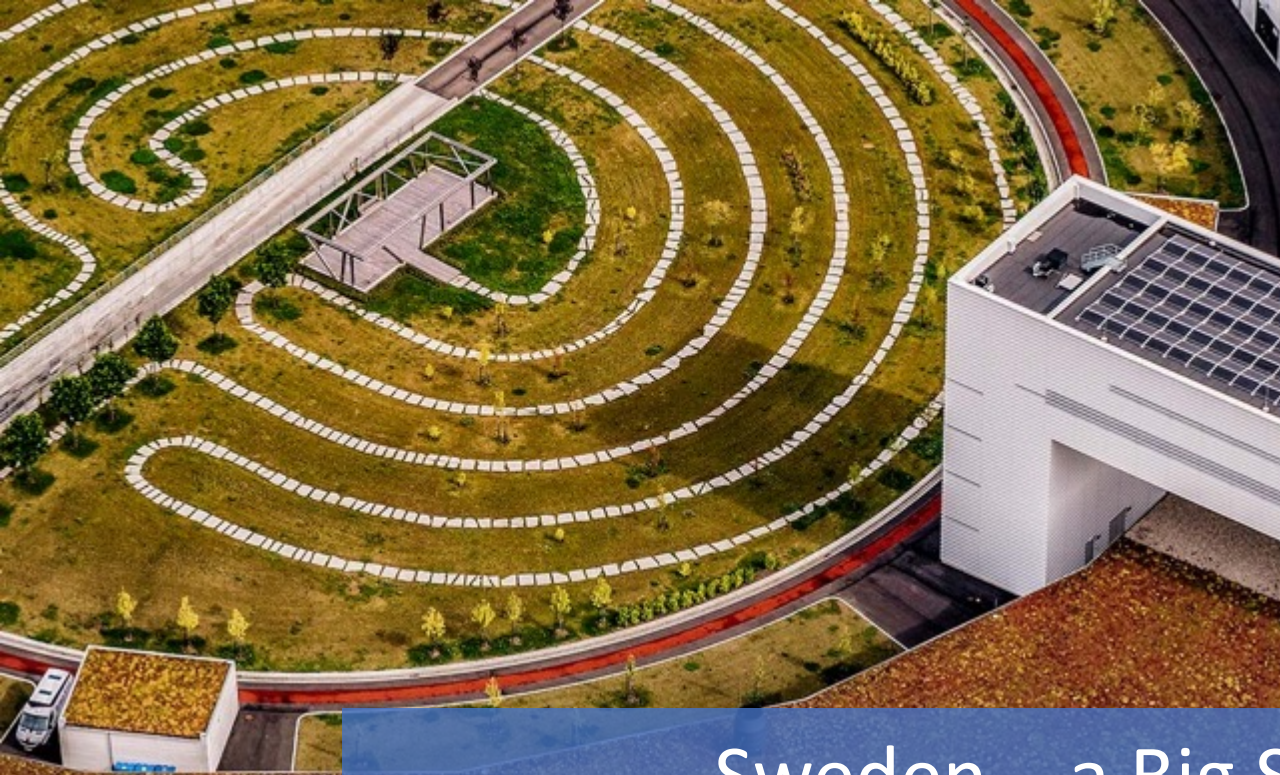
Mentimeter question

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Sweden – a Big Science nation

MAX IV Laboratory hosted at Lund University is the brightest source of x-rays in the world.

ESS will be the world's most powerful pulsed neutron source and will enable scientific breakthroughs in a wide range of areas.



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