

Industrial Liaison Office (ILO) • Knowledge Transfer Office (KTO) • Careers in Big Science

BIG SCIENCE SWEDEN – CONNECTING BIG SCIENCE WITH SWEDISH EXPERTISE

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LTU, 20 november 2026

Vetenskapsrådet
Swedish Research Council

VINNOVA
Sweden's Innovation Agency

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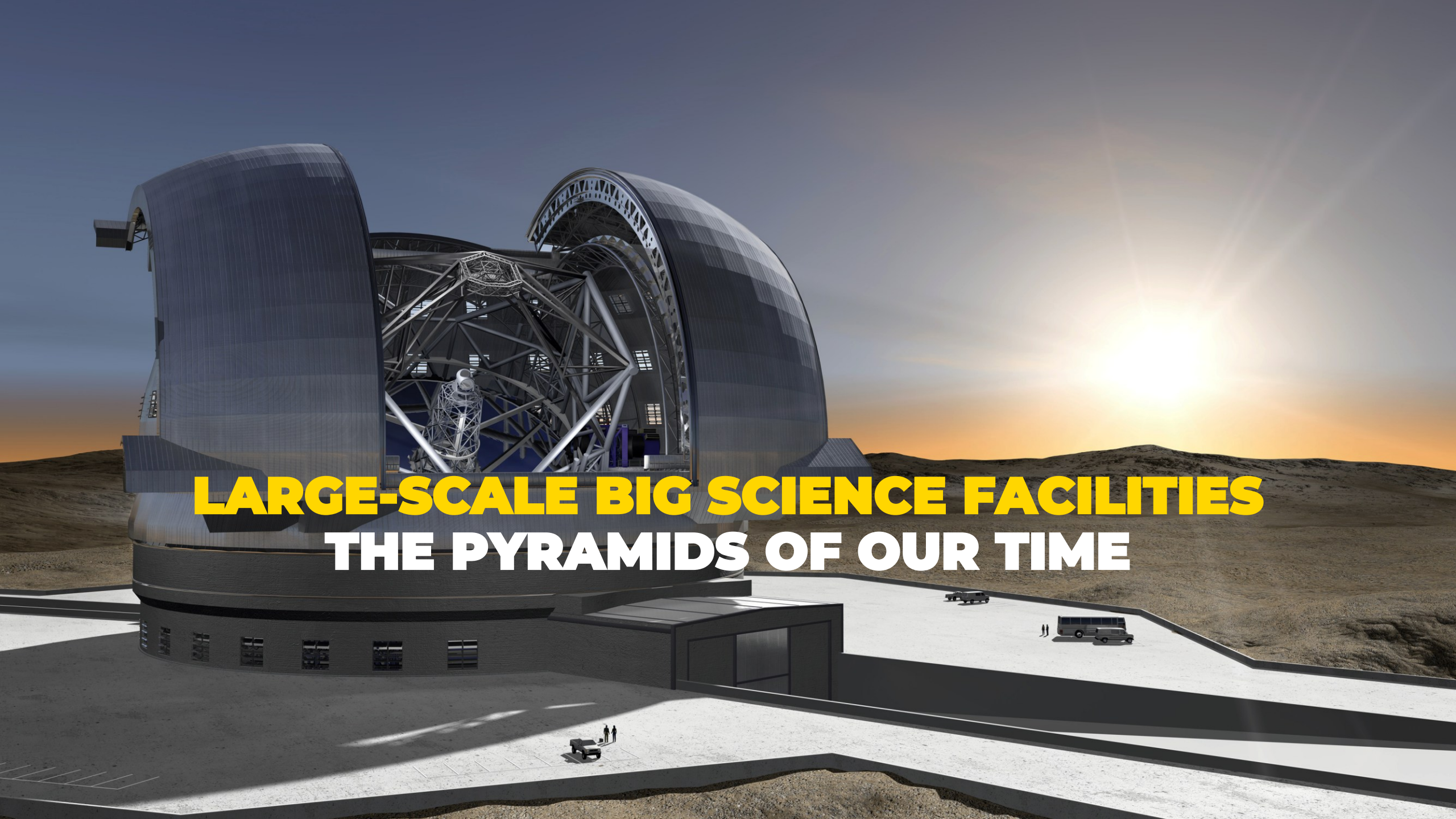
Today, wonders are created in


LARGE-SCALE BIG SCIENCE FACILITIES
THE PYRAMIDS OF OUR TIME

BIG SCIENCE IN SWEDEN: EISCAT, MAX IV AND ESS



EUROPEAN SPALLATION SOURCE (ESS)

ESS, currently under construction in Lund, Sweden, will be a multidisciplinary research facility using the world's most powerful neutron source, based on particle accelerators and spallation technology.

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MAX IV IN LUND

MAX IV is a synchrotron light facility in Lund. Its beamlines provide X-ray spectroscopy, scattering, diffraction and imaging techniques.

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EISCAT IN KIRUNA (HQ)

EISCAT conducts atmospheric and ionospheric research using incoherent scatter radar. Facilities are located in Finland, Norway and Sweden, north of the Arctic Circle. The next-generation radar system, EISCAT_3D, is under construction.

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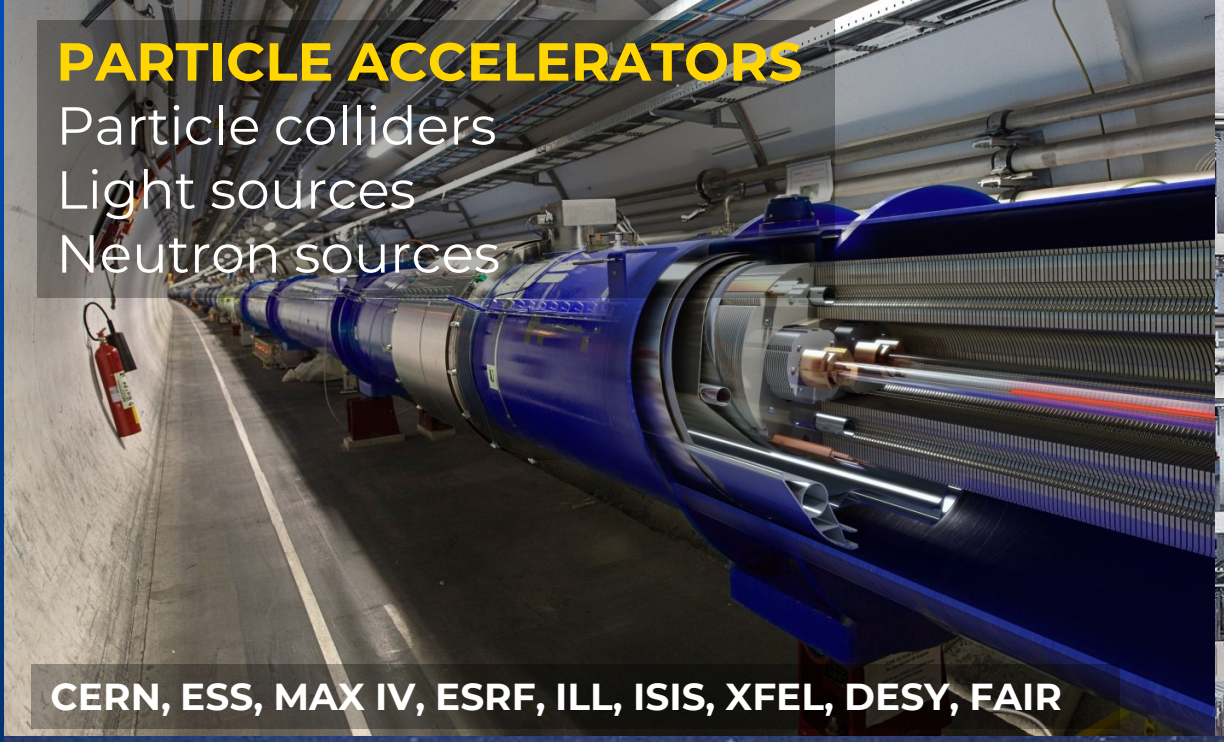
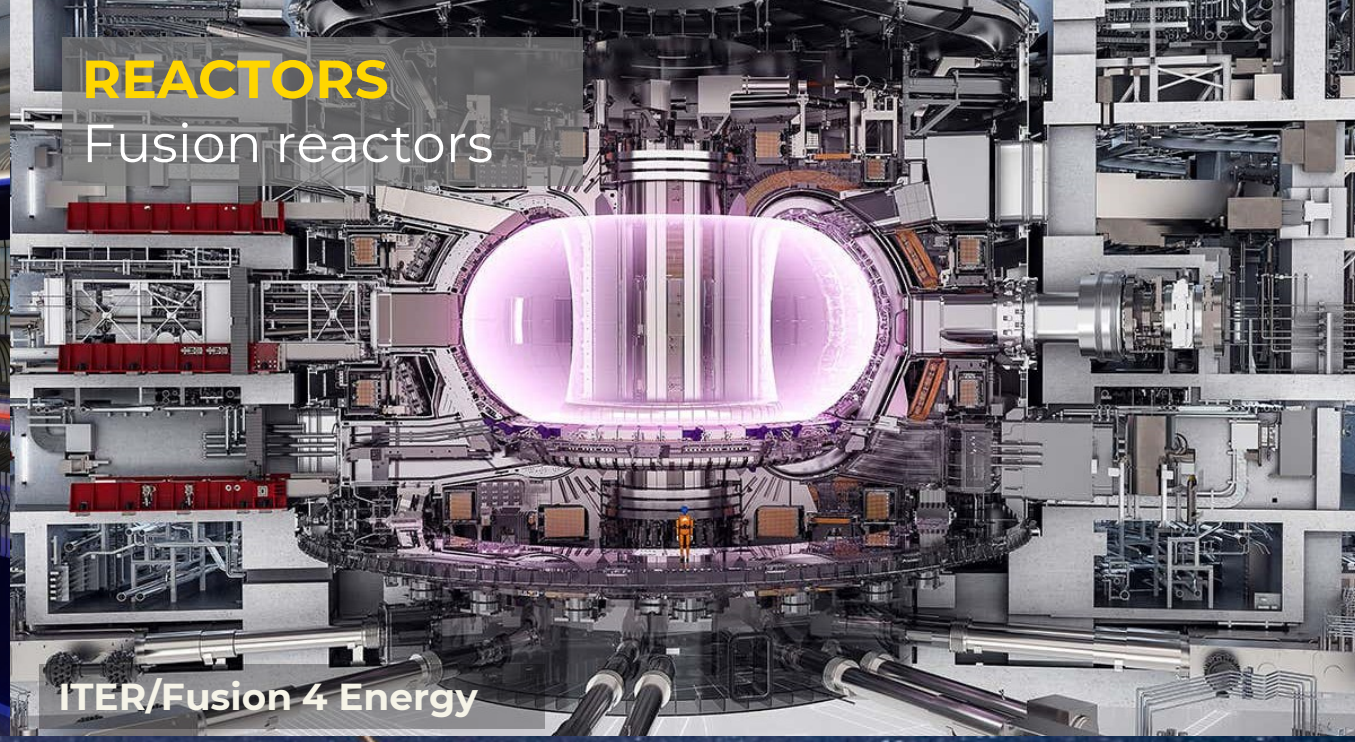


PARTICLE ACCELERATORS

Particle colliders
Light sources
Neutron sources

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



REACTORS

Fusion reactors

ITER/Fusion 4 Energy



RECEIVERS

Radio telescopes
Optical telescopes
Scatterers

ESO, SKA, EISCAT

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Not just fundamental science, but also
HIGH-TECH DEVELOPMENT

TECH AREAS

Business opportunities for suppliers with unique high-tech expertise

- Accelerator technology
- AI and machine learning
- Advanced materials, coatings, joining and casting
- Data management and visualisation
- Data transmission and signal processing
- Electronics, RF and microwave technology
- Remote control
- Cryogenics
- Magnets
- Software and control systems
- Optics
- Robotics
- Sensors and detectors
- Radiation protection and monitoring
- Vacuum technology

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CHALLENGES
CHALLENGING ENVIRONMENTS
ULTRA-HIGH PRECISION
EXTREME TEMPERATURES
LARGE DATA VOLUMES
BESPOKE COMPONENTS

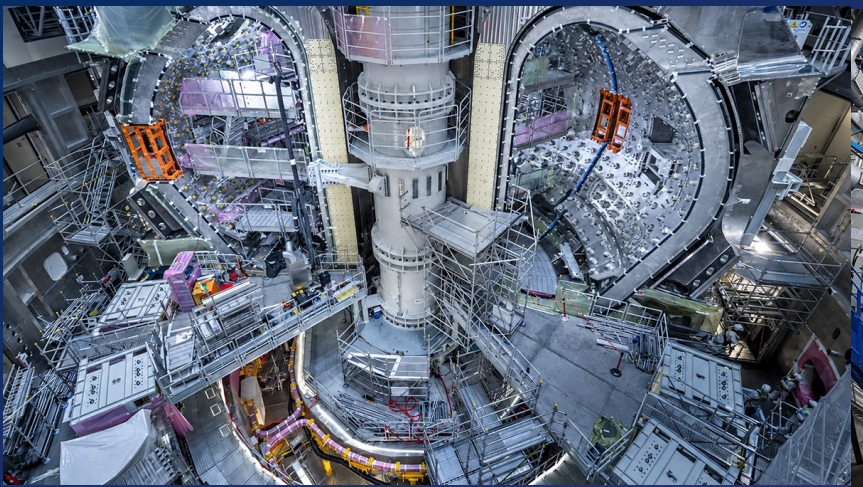
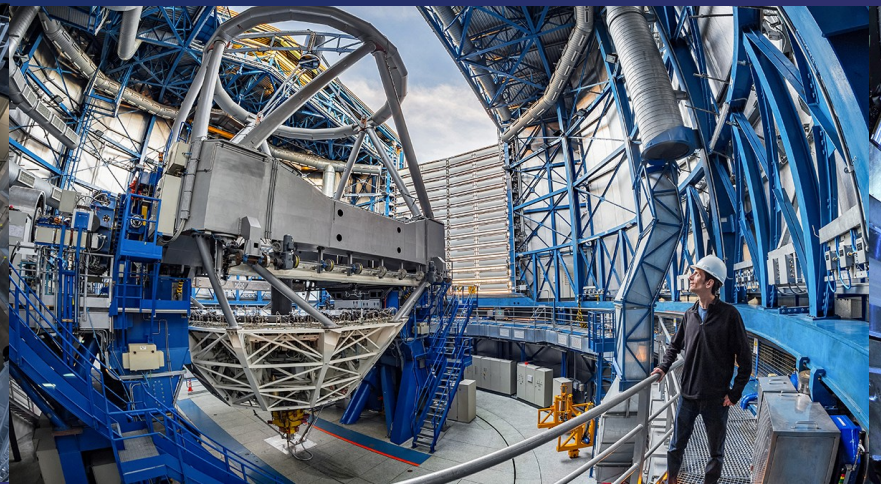
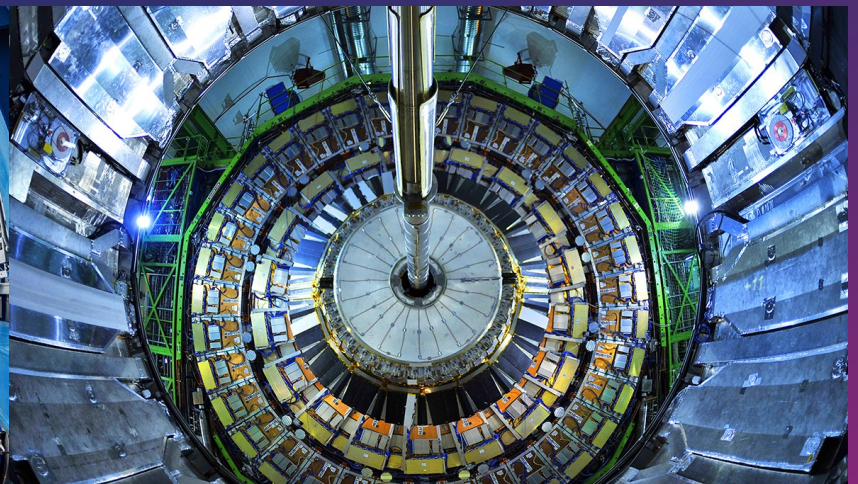
SWEDEN'S RETURN FROM BIG SCIENCE

Sweden invests over SEK 2 billion annually in Big Science facilities*

* *excluding ESA*

Sweden is generally well represented in scientific output, but remains underrepresented in procurement, collaboration, staffing, fellowships, technical student placements and visits.

Sweden misses out not only on business opportunities, but also on know-how, knowledge and career opportunities.

Big Science Sweden

CONNECTING SWEDISH INDUSTRY, UNIVERSITIES AND RESEARCH INSTITUTES WITH BIG SCIENCE FACILITIES

Big Science Sweden works to broaden Swedish participation in Big Science.

We help facilities connect with relevant Swedish expertise and help Swedish organisations understand facility needs and opportunities.



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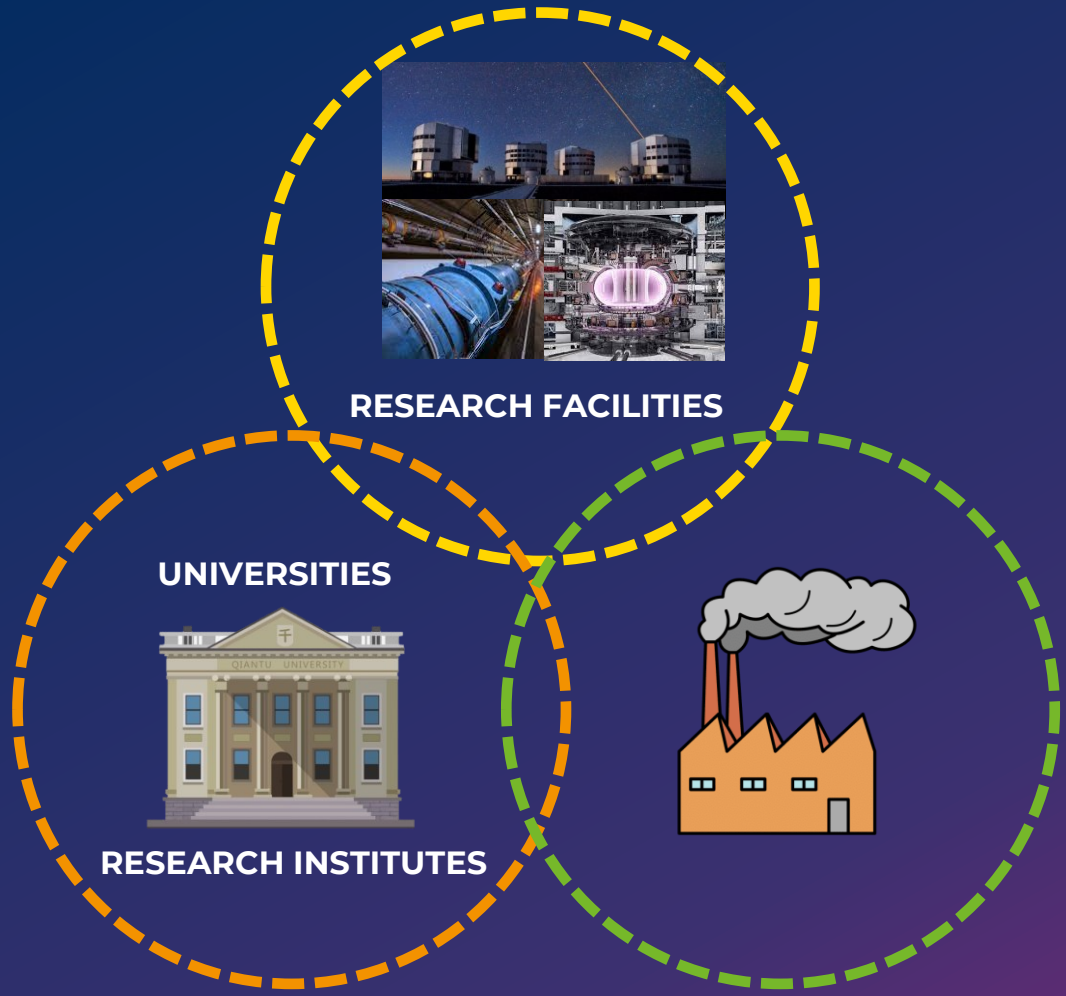
OUR GOALS

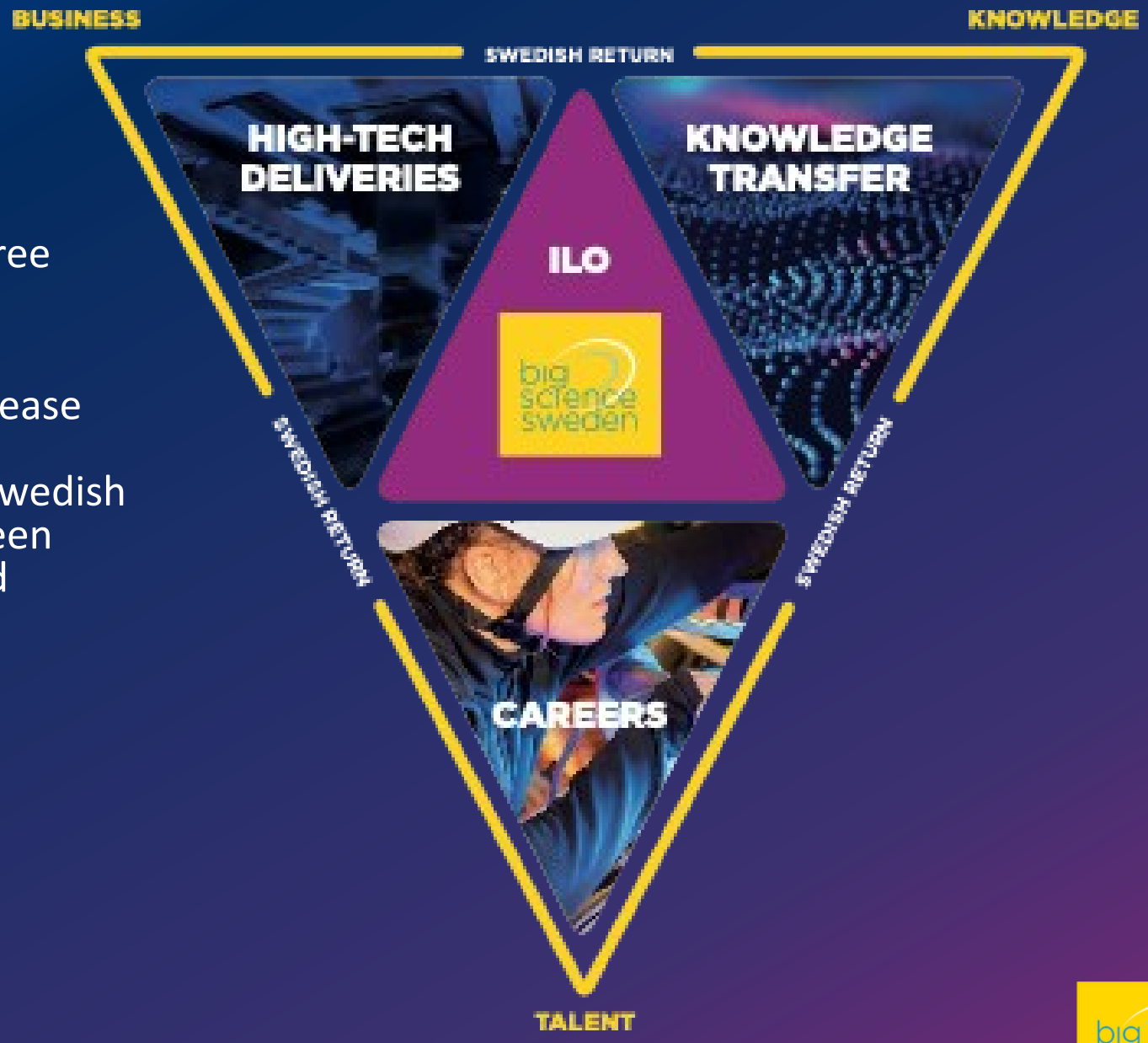
We work to increase Swedish participation in Big Science through:

- More Swedish deliveries and technology development projects at international research facilities.
- More projects transferring knowledge and technology from research facilities to Swedish companies, universities and research institutes.
- Greater Swedish presence at research facilities through more Swedish students and staff.



THREE AREAS

- Big Science Sweden works across three main areas: High-tech Deliveries, Knowledge Transfer and Careers.
- Together, these activities aim to increase Sweden's return from Big Science, strengthen the competitiveness of Swedish industry and build closer links between Swedish organisations and advanced research facilities.





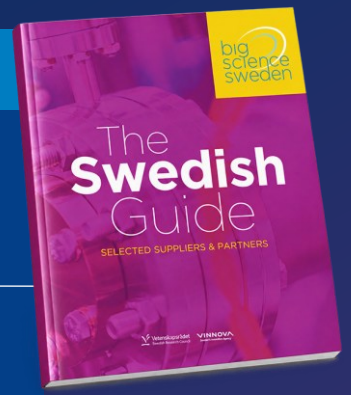




OUR INDUSTRIAL NETWORK

We support 300 Swedish SMEs and large companies

VALUE FOR MEMBER COMPANIES
Increased visibility of their expertise among international research facilities
Better understanding of technical requirements and how facilities operate
Connections with potential partners for joint bids and technology development





Our suppliers are located throughout Sweden.

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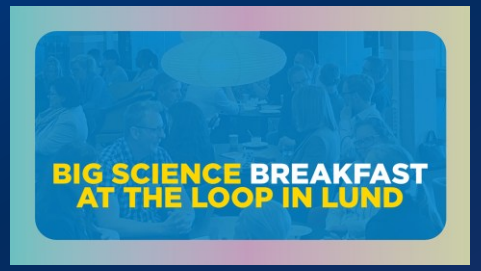
HOW WE WORK

- Sharing information about facility needs and upcoming projects
- Matching facility procurement needs with relevant Swedish suppliers
- Matchmaking and networking events
- Technical seminars
- Identifying opportunities for collaboration at an early stage
- Student outreach and information about careers in Big Science

































SWEDISH BIG SCIENCE FORUM

Connecting Big Science facilities and projects with Swedish industry, institutes and universities.



AIMDAY BIG SCIENCE TECHNOLOGY

These workshops bring together representatives from Swedish industry, academia and Big Science facilities to discuss one question for one hour.



STUDENT PROGRAMMES AND CAREER PATHS

Big Science Careers informs students, recent graduates and professionals about career opportunities, including jobs and internships, and provides application support, events and networking opportunities.

ONE TEAM ACROSS SWEDEN

UPPSALA



Catarina Sahlberg
Programme Director



Fredrik Engelmark
Business Developer
Industrial Liaison Officer (ILO): CERN, FAIR, EuXFEL Petra III/IV (DESY)

LUND



Max Collins
Business Developer
Industrial Liaison Officer (ILO): F4E/ITER



Frida Tibblin Citron
Business Developer



Cajsa Fredlund
Communications Manager



Amelie Hallin
External Relations Manager



Mike Olsson
Business Developer
Industrial Liaison Officer (ILO):
ESS, ILL and ESRF
Contact point: MAX IV and ISIS



Joakim Sandberg
Regional Projects



Ebba Jacobsson
Communications Officer, Careers

GÖTEBORG/BORÅS



Paul Häyhänen
Business Developer
Industrial Liaison Officer (ILO): SKA



Oscar Isoz
Business Developer
Industrial Liaison Officer (ILO): ESO



Håkan Nilsson
Business Developer

LULEÅ



Lars-Åke Isaksson
Business Developer



Adam Wikström
Business Developer
Contact point: EISCAT



Mattias Vesterlund
Business Developer

Our team spans Sweden, with most members combining their work at Big Science Sweden with roles in related organisations.

FUNDING

PARTNERS

IN THE PIPELINE: TECH STRATEGY FOR RIs

TECHNOLOGY STRATEGY FOR RESEARCH INFRASTRUCTURE

Applied for funding from Vetenskapsrådet – not yet approved.

- Using upgrade and development plans at MAX IV and ESS as a starting point, identifying generic technology areas, also relevant for other large-scale international research infrastructures.
- Surveying the technology needs, and mapping them to Swedish capabilities in academia, at institutes and in industry.
- Resulting in a Swedish strategy for technology development for research infrastructures, identifying opportunities, as well as needs for collaboration and investments.

If approved:

- We will engage with universities around Sweden, especially during the mapping phase, but we would welcome dialogue also before and after.
- Project expected to start 1 Jan 2027 and run until the end of 2029.



QUESTIONS?

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REAL PROJECTS,
REAL COLLABORATIONS



ABB – From CERN success to GSI/FAIR

ABB's work with CERN and GSI/FAIR shows how shared expertise creates business opportunities and supports more sustainable research facilities.



BUMAX – CERN's toughest demands drive innovation

BUMAX®

For BUMAX, meeting CERN's performance requirements drives continuous improvement and builds expertise that benefits all customers.

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EKA and Assemblin – Advancing sustainable cooling for Big Science

CERN EKA Assemblin

EKA and Assemblin combine their expertise to help CERN and GSI/FAIR explore more sustainable cooling solutions.
The CERN collaboration began at an AIMday Big Science Technology workshop.

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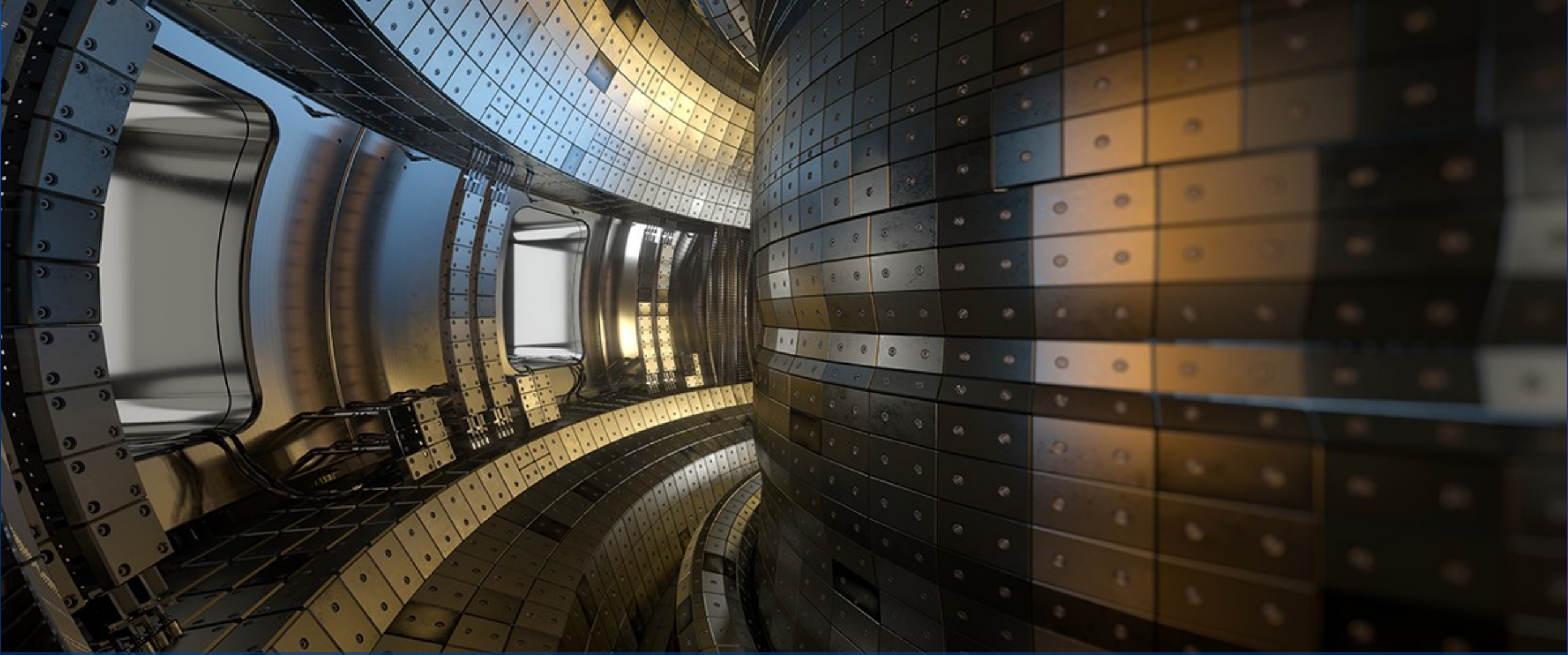
Fagerström, Examec and RFR Solutions – Mirror cleaning for the ELT in Chile

Fagerström Industrikonsult, RFR Solutions and Examec are collaborating on a high-tech project for ESO. Fagerström Industrikonsult won the contract in tough competition with international giants.



Freemelt – Advancing fusion materials through additive manufacturing

FUSION FOR ENERGY

Freemelt

Freemelt's modular printers, designed for industrial applications, support complex geometries and high-performance materials, such as tungsten.

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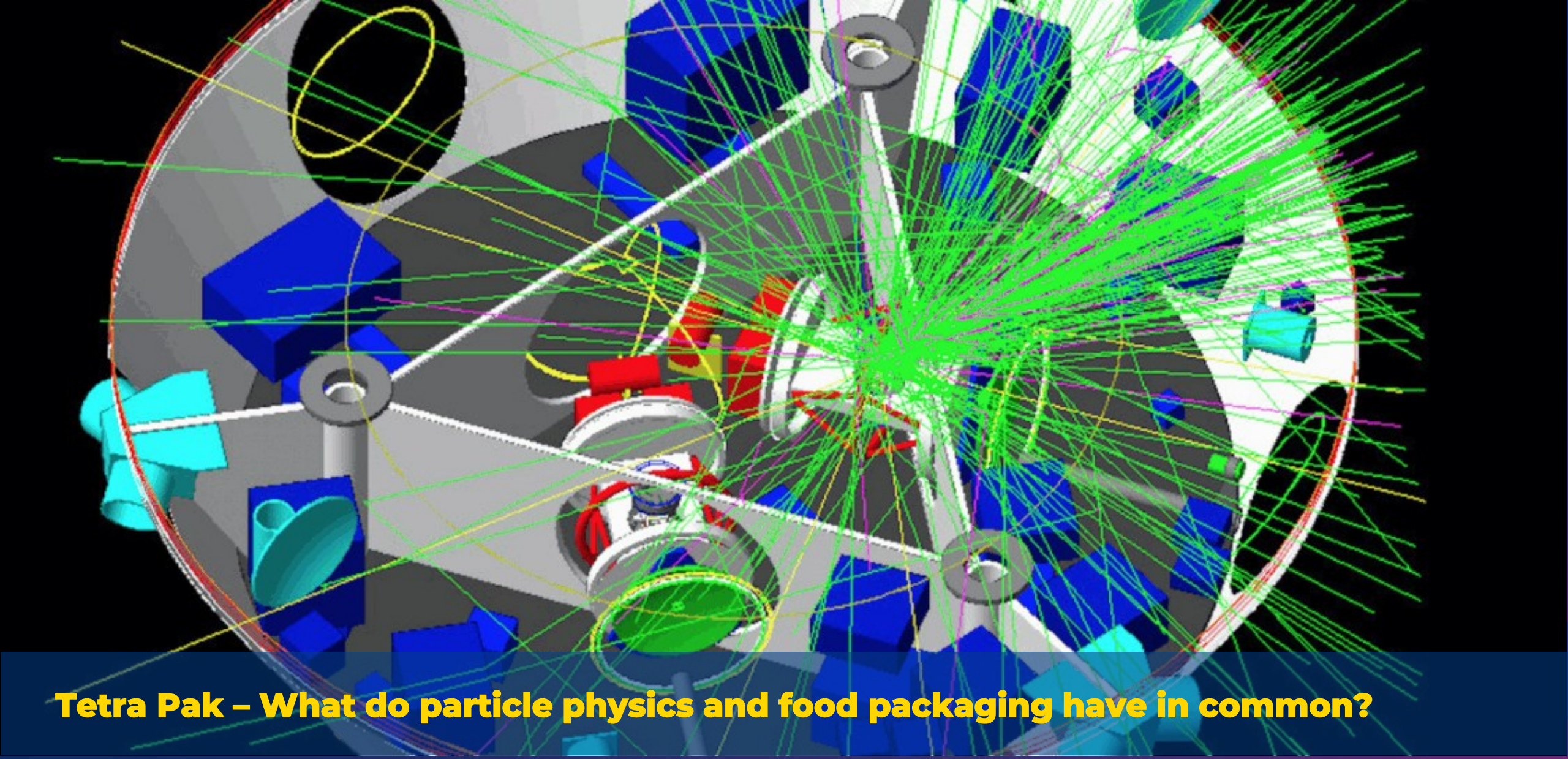
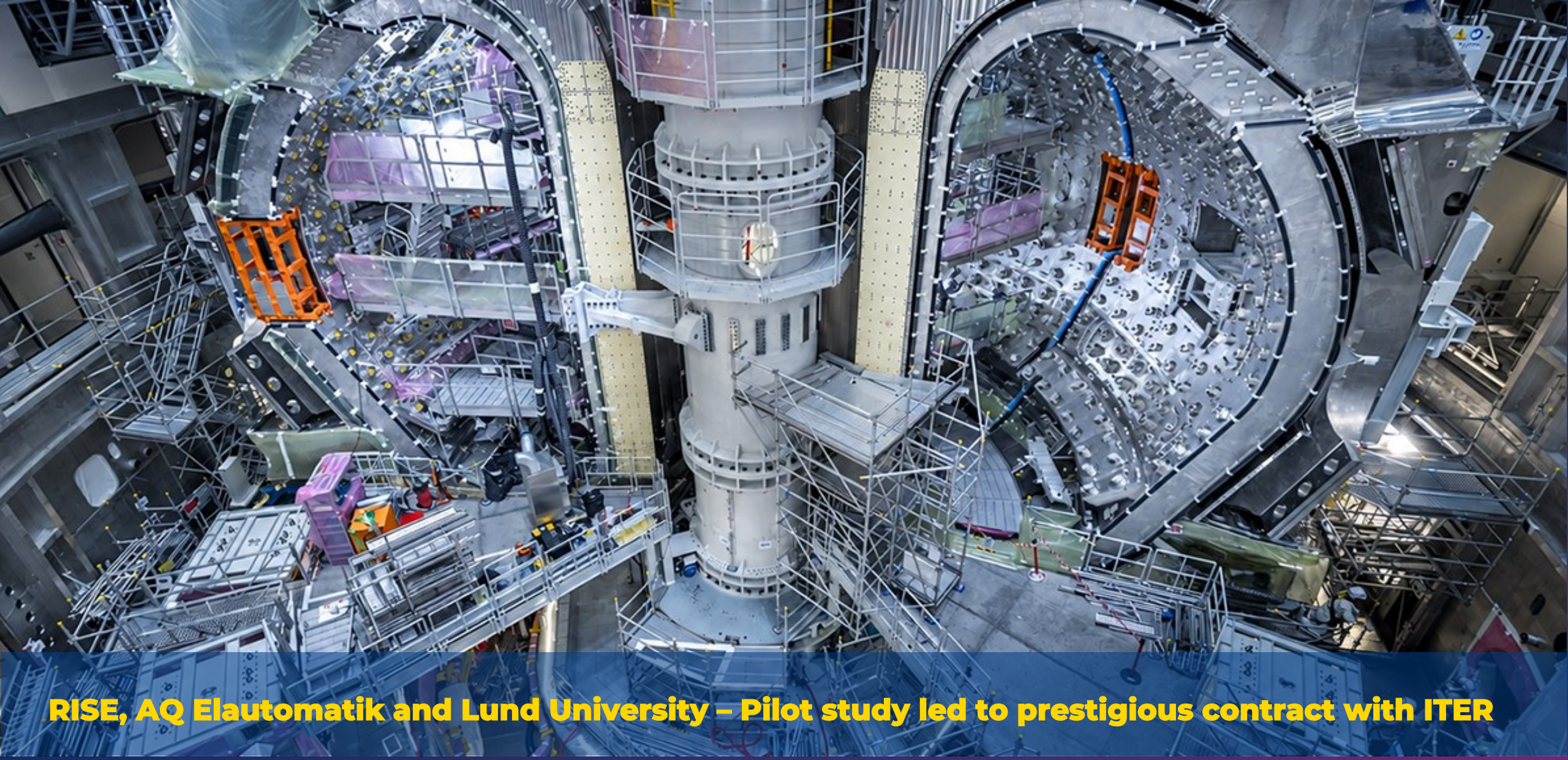
Qamcom – signals from space into cutting-edge technology for the world's largest radio telescope SKAO

In 2023, Qamcom secured SKAO's first Swedish industrial contract – a prestigious order for both the company and Sweden.



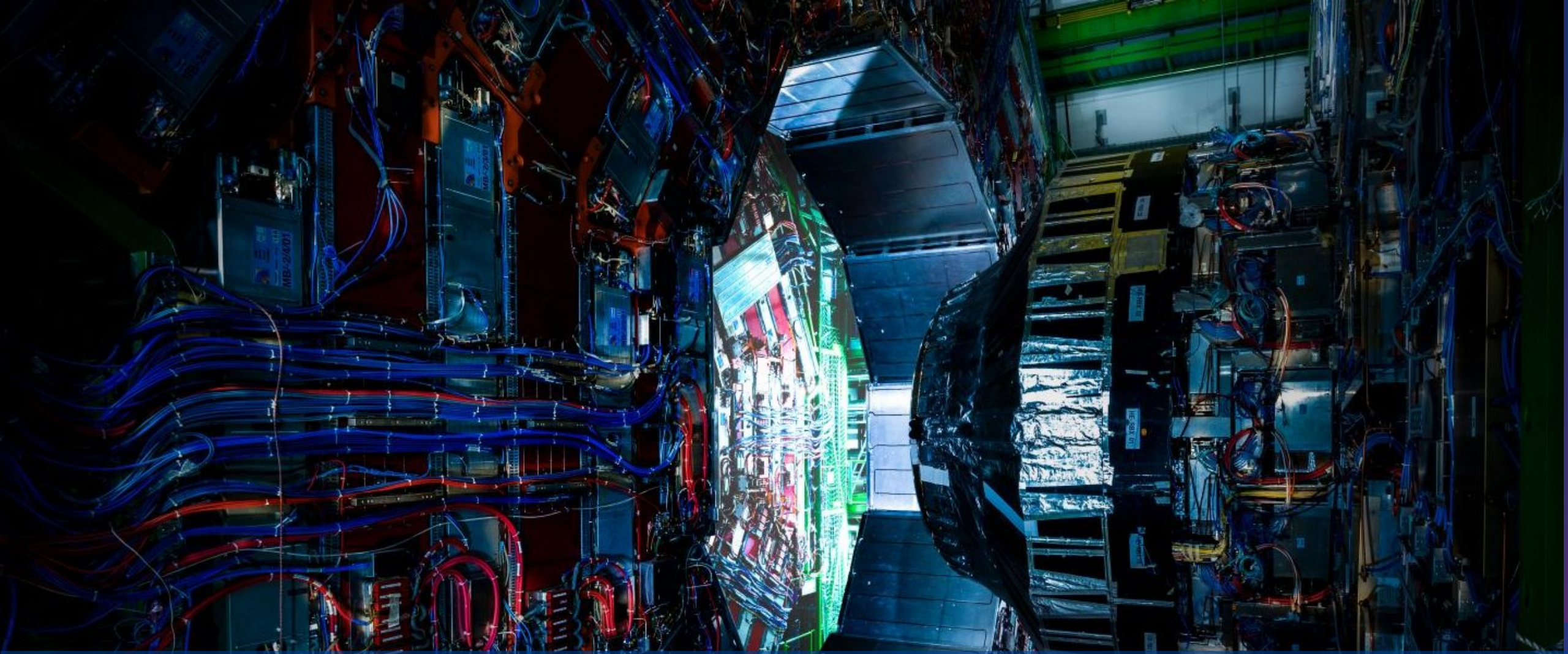
Tetra Pak – What do particle physics and food packaging have in common?

By transferring advanced simulation methods from CERN into food packaging development, Tetra Pak is applying cutting-edge science to solve practical challenges in food production and packaging



RISE, AQ Elautomatik and Lund University – Pilot study led to prestigious contract with ITER

RISE, AQ Elautomatik and Lund University's Faculty of Engineering won a prestigious ITER contract in 2023, following a pilot study on the design of a power converter to operate close to the reactor.



Development of superconducting magnets for the LHC upgrade at CERN

CERN · Uppsala Universitet · Linnæus University · Scanditronix · Rydverken · wst.se Vattenskärning

Kort info här?? Och bild 0k?
https://kt.cern/superconducting-magnets/

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Pioneering trainee programme in vacuum technology launched at ESS

Big Science Sweden, ESS, Teknikcollege Skåne and Region Skåne launched a six-month trainee programme in vacuum technology at ESS for two upper secondary school graduates.



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