



An initiative of the European Union

# CLUSTERS MEET REGIONS

# MALMÖ

SWEDEN | 15-16  
JUNE 2023

CLUSTERS AS BOOSTERS OF INNOVATION  
IN INDUSTRIAL ECOSYSTEMS



#SingleMarket30

# Session 3: Method: the role of enablers of Digital and Green Transition / ESS, Max IV and the Science Village Innovation System

- **Krisztina Halasz Anderberg**, Business Development Region of Skåne
- From policy to practice: Big Science Sweden, **Amelie Hallin**, External relations

Moderation: **Ida Åstrand**, Region Skåne



# The innovation ecosystem European Spallation Source, MAX IV and Science Village in Sweden

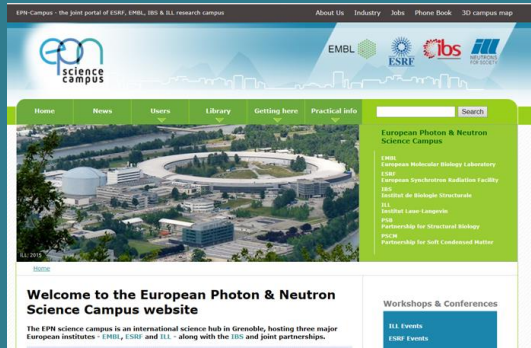
15 June 2023 ECCP Cluster meets Regions

*Krisztina Anderberg Halasz*

*Regional Development, Region Skåne*



# Innovation Ecosystems around large research facilities



Grenoble,  
France  
ESRF  
ILL

Harwell, UK  
Diamond light source  
ISIS



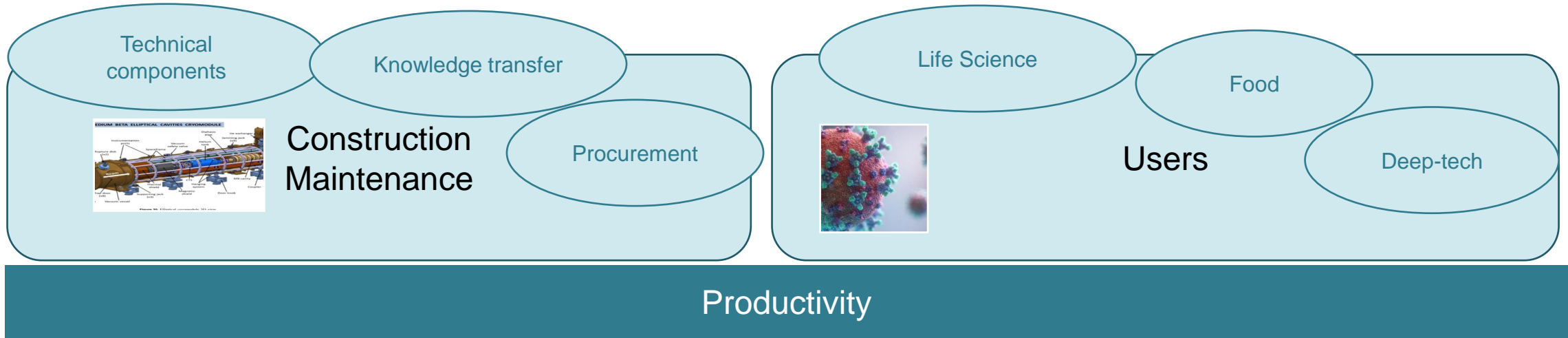
Hamburg,  
Germany  
DESY, XFEL

Lund, Sweden  
MAX IV  
ESS

Copenhagen,  
Denmark

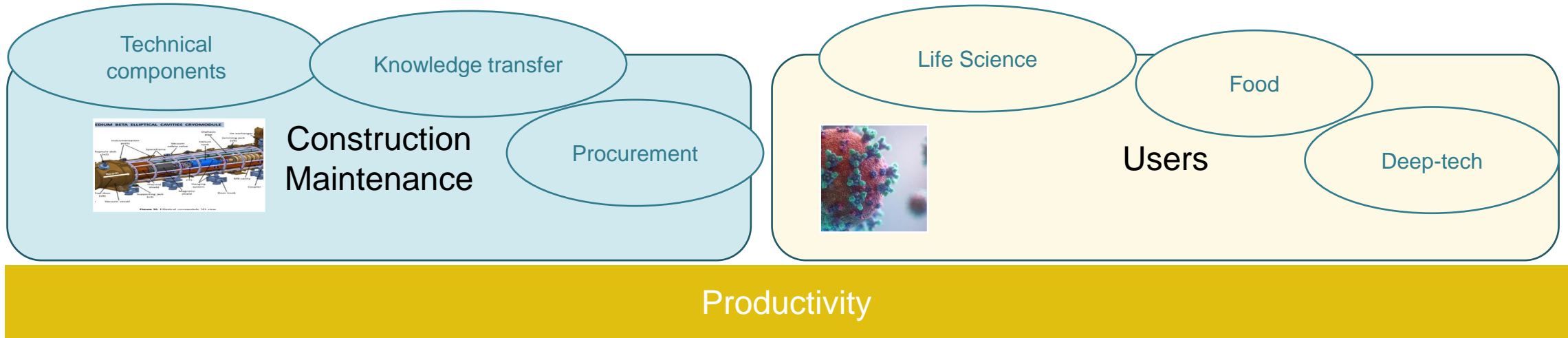


# Region Skåne's focus 2023



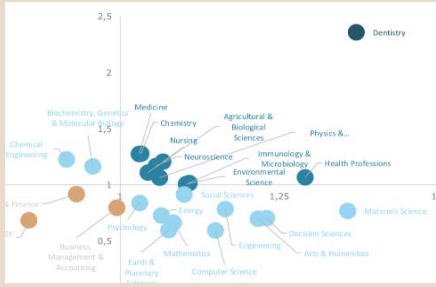
Attractiveness	Collaboration
Buildings	Local
People	National
Content	International

# Region Skåne's focus 2023



Attractiveness	Collaboration
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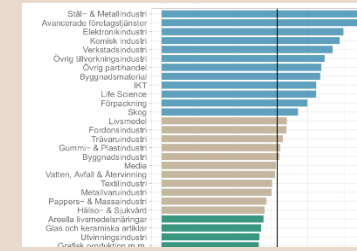
# Research



# Unique possibilities



# Business



# Smart specialisation



ESS, MAX IV & SCIENCE VILLAGE



**TECH**

Advanced Materials and Manufacturing

Smart Sustainable Cities

**FOOD**

ESS, MAX IV and Science Village

Life Science and Health

# FIRS grupp EMS

- **Lunds Universitet:** Chairman Heiner Linke, Pro dean Faculty of Engineering, Lund University



- **Malmö Universitet:** Thomas Arnebrant, Pro Vice Chancellor, Malmö University



- **ESS:** Pia Kinhult, Head of Host State relations

- **MAX IV:** Magnus Larsson, Head of Industrial Relations at MAX IV Laboratory

- **RISE:** Niklas Lorén, Project leader, Product design, RISE

- **Science Village Scandinavia AB:** Christian Lindfors, CEO

- **Lunds Kommun:** Magdalena Titze, Project leader

- **Region Skåne:** Processledare Krisztina Anderberg Halasz, Development Manager





# Unique research facilities open to academia and industry



## Most brilliant X-rays for research

- A national research facility
- Lund University host
- Operational since 2016
- Synchrotron



## Advanced, high-power neutron spallation source

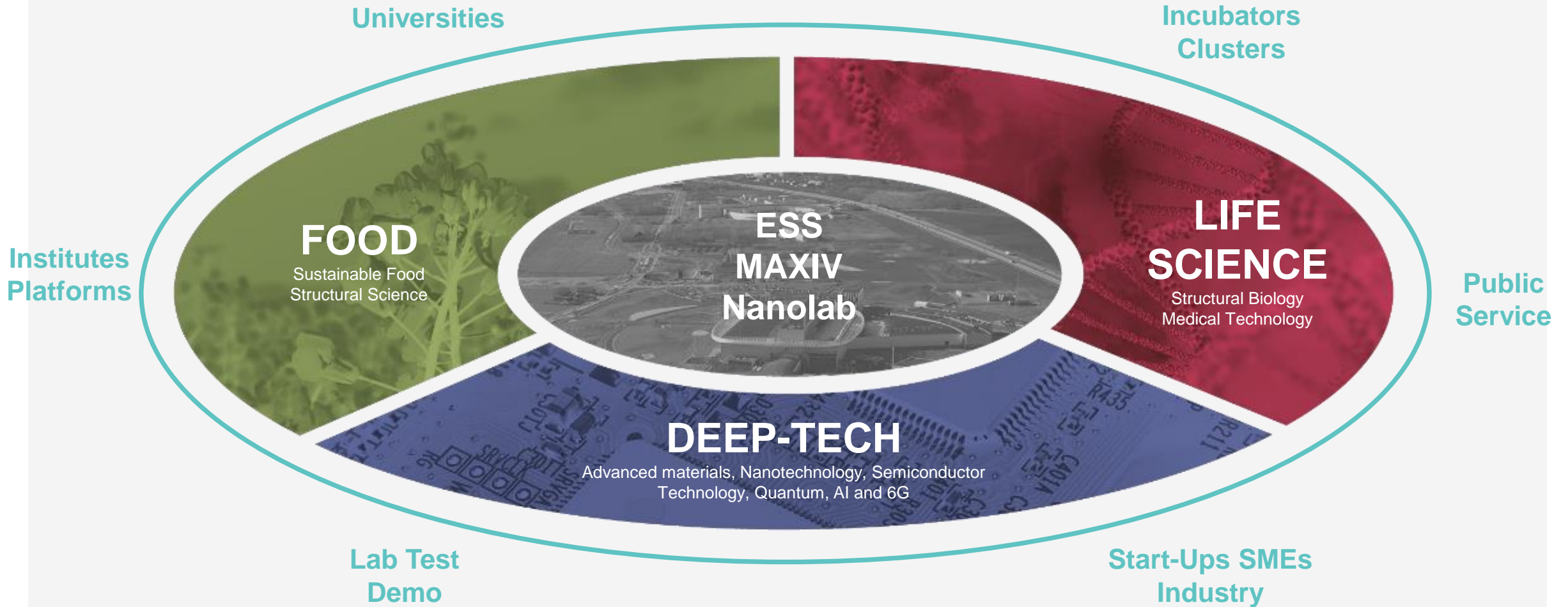
- 13 European founding members
- Sweden and Denmark hosts
- Operational from 2027
- Neutron



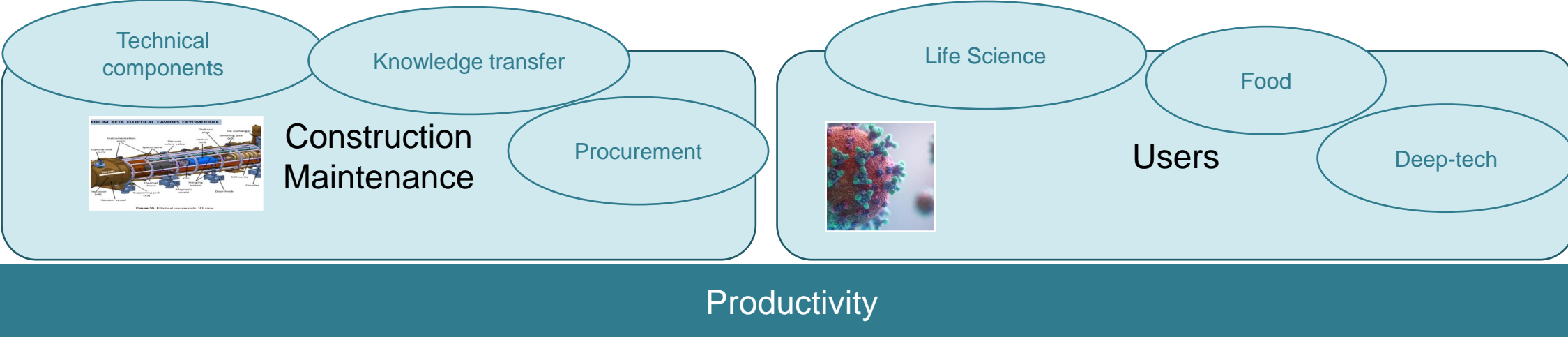
## Sweden's largest nanofabrication facility

- Node of national research infrastructure Myfab
- Lund University host
- Operational from 2028
- Advanced nanomaterials and semiconductors

# Mature innovation ecosystem with three focus areas



# Region Skåne's focus 2023



Attractiveness	Collaboration
Buildings	Local
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# Science Village

NanoLab Science Village, planerad inflyttning 2025/2026

Ny detaljplan på ca 120 000 kvm BTA under utveckling, planerat antagande 2025

Insikten, planerad inflyttning 2025/2026

Lund Science Center, planerad inflyttning 2025/2026

The Loop (Inkl. Science Village Hall), inflyttning 2024

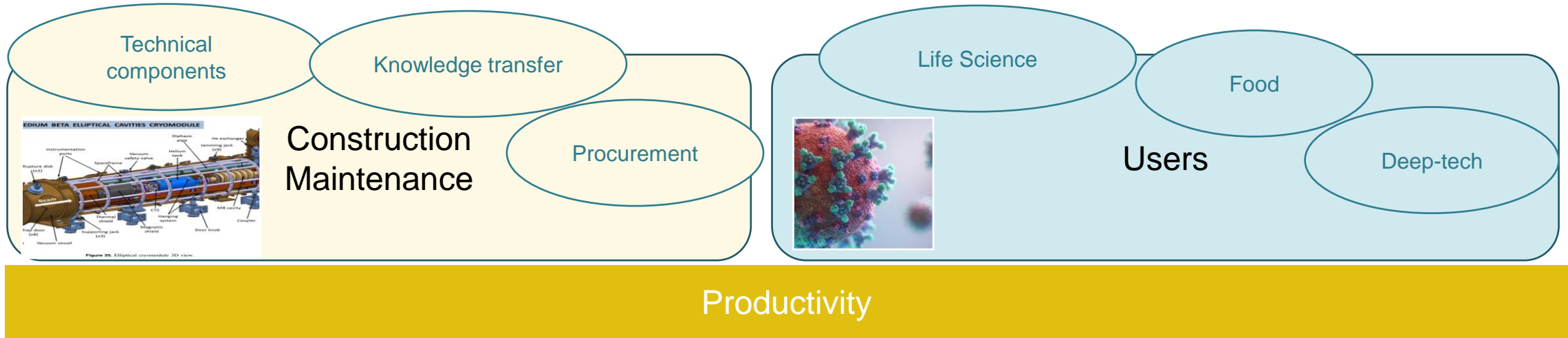
Spektra, planerad inflyttning 2025/2026

Space (Inkl. Oatly), inflyttning 2023

LKP Mobilitetshus, planerad inflyttning 2026

Lärdomen, planerad inflyttning 2025/2026

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# BIG SCIENCE SWEDEN BUSINESS AND INNOVATION

SWEDEN'S INDUSTRIAL LIAISON OFFICE (ILO)  
KNOWLEDGE TRANSFER OFFICE (KTO)

Big Science Sweden is funded by:



Swedish  
Research  
Council

**VINNOVA**  
Sweden's Innovation Agency

Big Science Sweden is led by a consortium:

**CHALMERS**  
UNIVERSITY OF TECHNOLOGY



LUND UNIVERSITY

**L**  
LULEÅ  
UNIVERSITY  
OF TECHNOLOGY



UPPSALA  
UNIVERSITET

**RI  
SE**

Teknikföretagen



A collage of scientific images. The background features a large particle detector, possibly the Large Hadron Collider, with its complex structure and glowing elements. Overlaid on this are several circular and rectangular insets: a satellite dish, an aerial view of a city or campus, a person in a lab coat working with equipment, and another satellite dish. The text 'BIG SCIENCE' is centered in a white, sans-serif font on a dark blue, semi-transparent rectangular background.

# BIG SCIENCE





# Big Science

” [...] **characterized by large-scale instruments and facilities**, supported by funding from government or international agencies, in which research is conducted by teams or groups of scientists and technicians.

[...] Big Science shared many characteristics of other industrial and government enterprises. **Large scale, expensive, and heavily bureaucratic**, Big Science’s most ambitious projects—satellites and space probes, particle accelerators, and telescopes—rivalled those of military and industrial institutions in their size and complexity.

[...] **the contemporary equivalents of Egyptian pyramids or Gothic cathedrals.** [...]”

(Encyclopaedia Britan

WE ARE THE BRIDGE...

**...connecting Swedish  
industry and academia  
with Big Science research  
organisations**





# BIG SCIENCE SWEDEN BUSINESS AND INNOVATION

INDUSTRIAL LIASON OFFICE (ILO)  
KNOWLEDGE TRANSFER OFFICE (KTO)

## Mission:

- **Support Swedish industry, institutes and universities** to contribute to excellent big science facilities.
- **Focus on high-tech contributions** that drive research, innovation, international collaboration and generate **good business for Sweden**.
- Create value for Swedish industry and society by **transferring new knowledge, technology and competence** to diverse areas of application.

- Information spreading
- Networking and relationship building
- Challenge-driven technical seminars
- Active and proactive work with upcoming procurements
- Actively looking for opportunities for Swedish industry, institutes and universities



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Swedish  
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Teknikföretagen



REGION  
SKÅNE



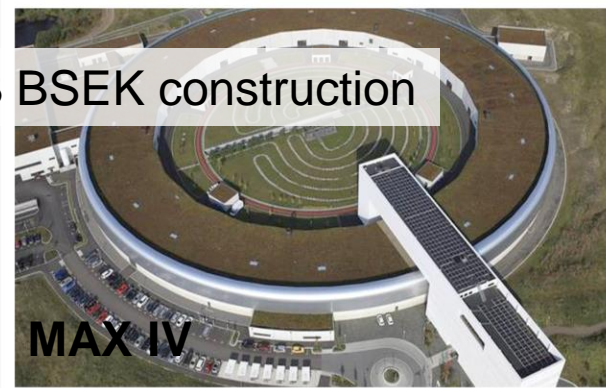
Syd  
Industriellt utvecklingscentrum

# Value

2 B€ construction  
50 M€ procurement p.a.



3 BSEK construction



1,2 BCHF annual budget  
400 M€ procurement p.a.  
1 BCHF HL-LHC



22 B€ construction



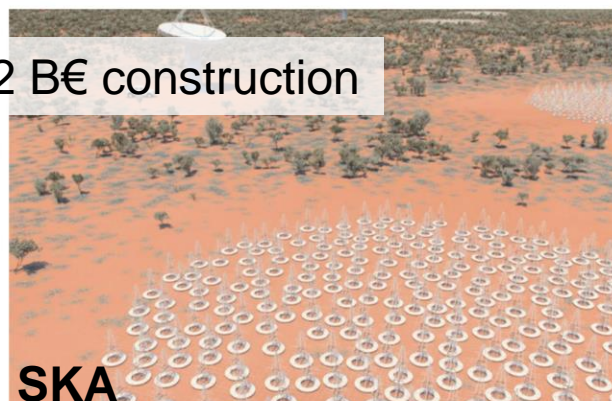
150 M€ annual budget  
1.5 B€ ELT



50 M€ procurement  
p.a.



2 B€ construction



2 B€ construction



# FROM GROUND TO SPACE AND BACK

## Procurement /Development


Advanced Materials	Magnets
Optics	Cryogenics
Sensors	Vacuum
Diagnostics	Remote Handling
Coating	Robotics
Joining	Software
Casting	Control Technologies
Electronics	AI/ML
RF Technologies	Data Handling
Microwave Technologies	Visualisation
Power Supplies	Construction
Radiation Protection	Mechanical Engineering
Radiation Control	...

## Outreach

Student programmes  
Technical staff  
Inspiring/recruiting to STEM  
...

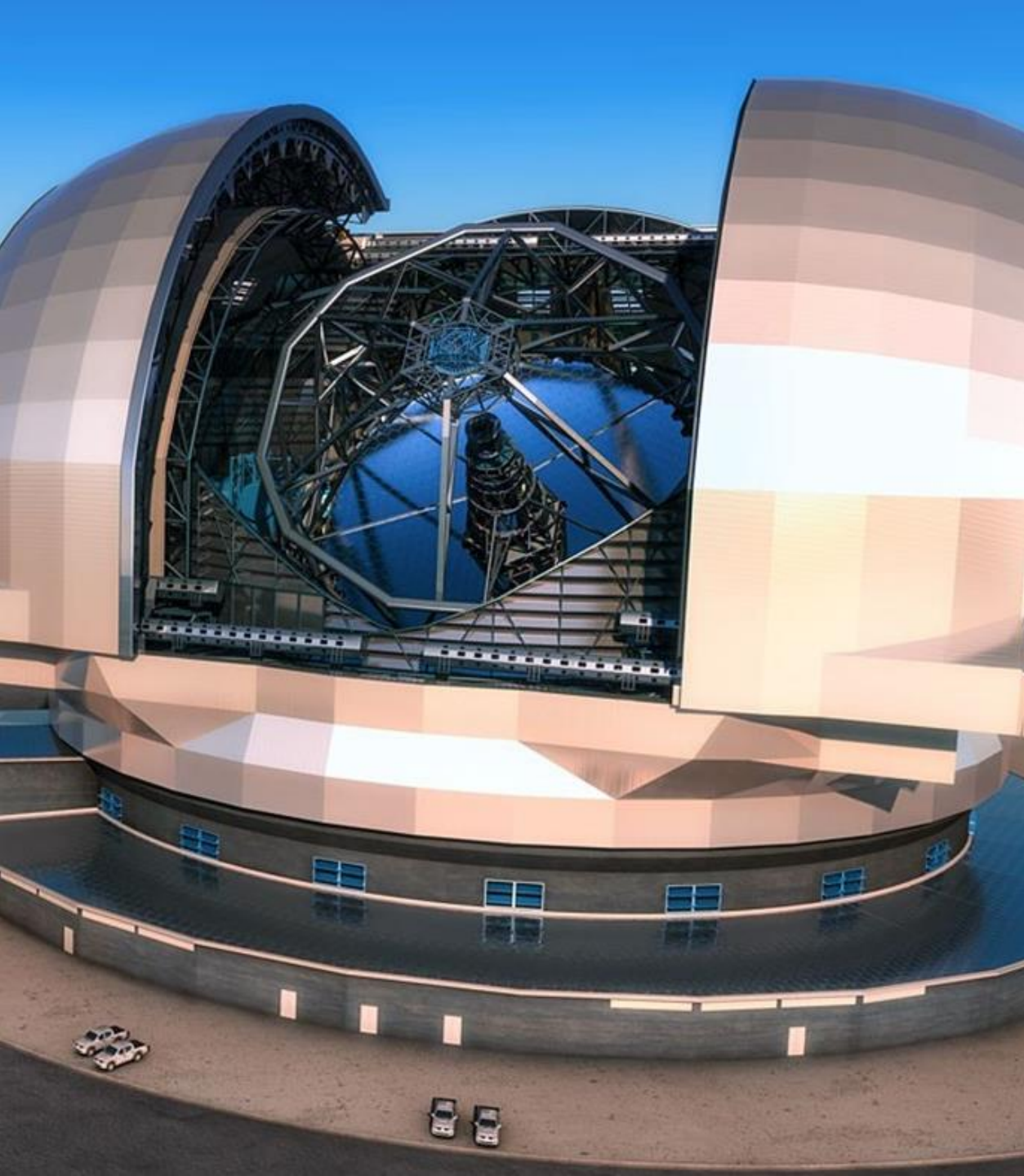
## Knowledge transfer

State-of-the-art  
Know-how  
Best practices  
...



## Large-scale research facilities are stimulating innovation and technical development

We focus on Swedish innovation and technology development, and promote collaboration that generates business opportunities.



# Fagerström & ESO

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- ESO, European Southern Observatory.
- Extremely Large Telescope (ELT)
  - Reflecting telescope built with mirrors
  - The dome itself will be 100 meters in diameter
- Cleaning device with high precision

*There is no water or sewage on the mountain. In our solution, we also build a facility to create ultra-pure water, and in addition reuse 95 per cent of all liquids.*

**Carl Johan Fagerström, CEO at  
Fagerström      Industrikonsult AB**

Hur kan Sverige växa genom teknikutveckling och affärer med stora forskningsanläggningar?

29 JUNI TORSDAG

# Big Science Business Forum 2022

# BIG SCIENCE @RISE

DEFINING AREAS OF STRENGTH FOR RISE IN BIG SCIENCE

# PARTNERING IN BIG SCIENCE

OPPORTUNITY FOR SWEDISH COMPANIES TO MEET ASSYSTEM

# CERN ONLINE THEMATIC INDUSTRY DAYS

8 February, 2022

Building excellent research facilities

# PAN-EUROPEAN PARTNERING IN BIG SCIENCE

A virtual brokerage event with business meetings

PERIA ENRIITC Big Science Business Forum 2022 big science sweden

# IPAC '23

7 - 12 May 2023  
Venice, Italy

# FOCUSED TECHNICAL WORKSHOP REMOTE HANDLING 2022

Big Science Technical Seminar

# Advanced Manufacturing

# SWEDISH BIG SCIENCE FORUM

31 JAN - 1 FEB 2024 • CITY HALL, LUND, SWEDEN

big science sweden

# AIMDAY BIG SCIENCE TECHNOLOGY

big science sweden

Linear accelerator UNILAC  
Ring accelerator SIS18  
Ring accelerator SIS100

# SWEDEN@ FAIR 2023

Production of new atomic nuclei  
Production of antiprotons

LINXS LUNDS UNIVERSITET big science sweden

# BIG SCIENCE @LU

DEFINING AREAS OF STRENGTH FOR LU IN BIG SCIENCE

Focused Technical Workshop

# Vacuum Technology

ClusterXChange: Visit Big Science in Germany 2-4 May 2023

# VISIT BIG SCIENCE IN GERMANY

LULEÅ TEKNISKA UNIVERSITET big science sweden

# BIG SCIENCE @LTU

DEFINING AREAS OF STRENGTH FOR LTU IN BIG SCIENCE





Thank you!

**Amelie Hallin**

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[amelie.hallin@bigsciencesweden.se](mailto:amelie.hallin@bigsciencesweden.se)



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