

AIMDAY BIG SCIENCE TECHNOLOGY 2021

big
science
sweden

® AIM DAY



Welcome

AIMday Big Science Technology 2021

Agenda

1. Introduction to the day:

09:00 - 09:20, We will have a short introduction about AIMday Big Science Technology in the morning, and give you some guidelines to prepare you for the day.

2. Workshops will be held in 4 sessions:

Session 1: 09:30-10:30

Session 2: 11:00-12:00

Session 3: 13:00-14:00

Session 4: 14:30-15:30

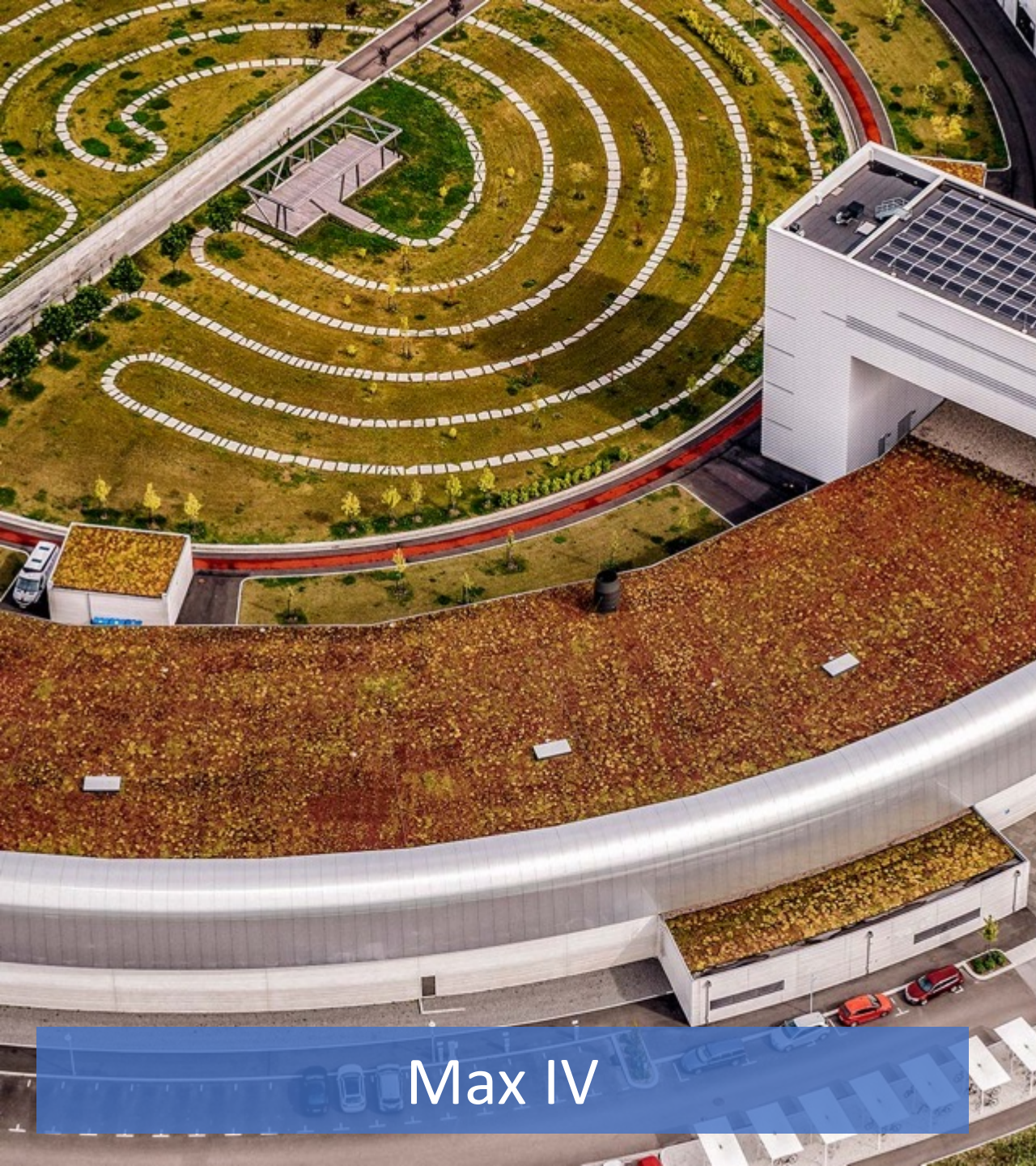
3. Summary and next step

After the last session, we will stay tuned in the general zoom link. Join us for a summary and possible next step
Kl. 15:40-16:00



Anna Hall

Director Big Science Sweden



Max IV



ESS

Particle Accelerators



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

Fusion

ITER
DONES



Space

ESO, SKA, EISCAT



Funded by:



Big Science Sweden is led by a consortium:



Big Science Sweden - 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.

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-Christian 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 Borgen
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 Engelman
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-Christian Ebenhag, Mike Olsson, Lars-Åke Isaksson

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

3. Technology group 3

TEAM: Fredrik Engelman, 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

DISCOVERY DAY
INNOVATE WITH CERN

FAIR AT
BIG SCIENCE
MORNING

REMOTE
ITER
BUSINESS
MEETING

STEP BY STEP
BIG SCIENCE
PROCUREMENTS

BECOME A
CERN
SUPPLIER

COMMERCIAL AND INDUSTRIAL
POSSIBILITIES OF EPIC

BIG SCIENCE
SWEDEN
CONFERENCE
2020

ACADEMIC
INFRASTRUCTURES
FOR INDUSTRIAL
DEVELOPMENT

FOCUS TECHNICAL
WORKSHOP
CARBON
FIBRE

FOCUS TECHNICAL
WORKSHOP
REMOTE HANDLING

DATA
HANDLING
BIG SCIENCE
MORNING

BIG SCIENCE
@ LU

BIG SCIENCE
@ RISE

BIG SCIENCE
@ CHALMERS

BIG SCIENCE
@ LTU

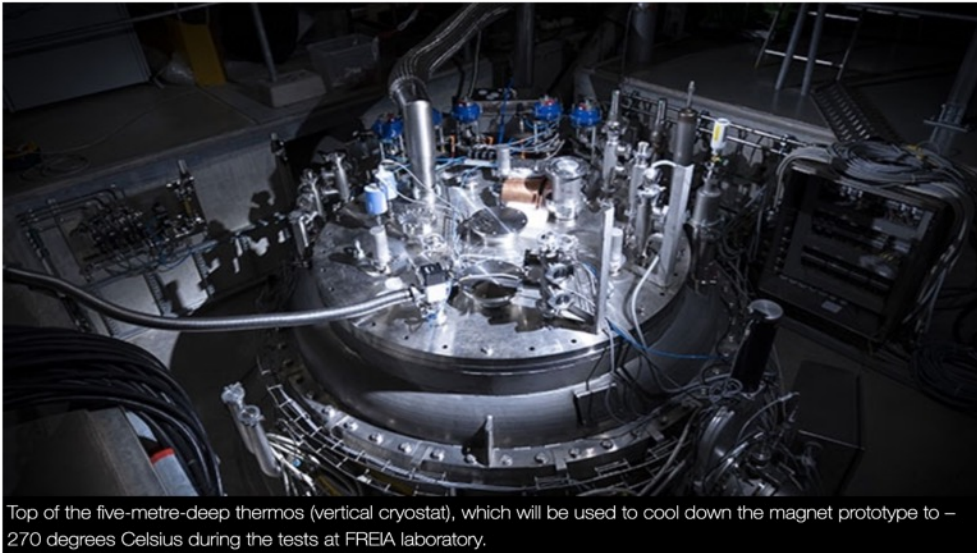
Welcome to an Optopub Webinar!
Thursday, 25th March 2021, 16.00 - 17.00 (CET)

AIMday 2019

– 5 pre-studies and a 19 MSEK project

Collaboration on energy efficient cold magnets

5 February 2021



Top of the five-metre-deep thermos (vertical cryostat), which will be used to cool down the magnet prototype to – 270 degrees Celsius during the tests at FREIA laboratory.

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.



Agenda for today

09:00-09:25 **Welcome and introduction**

<https://uu-se.zoom.us/j/63033566822>

09:30-10:30 **Room 1**

<https://uu-se.zoom.us/j/64371147164>

Question 4344

Facilitator: Anna Hall (Patrik Carlsson)

• **How can we enhance the quality of control system data for machine learning purposes in order to lower costs for both data handling and computing?**

Representatives:

Karin Rathsmann (ESS)

Scientists:

Ahmed Elragal, LTU
Caterina Doglioni, LU
Mathias Hamberg, VR
Per Andersson, GoalArt
Sribalaji C. Anand, UU
Lars-Åke Isaksson, LTU Business
Christian Glaser, UU
Fredrik Bolmsten, ESS

Room 2

<https://uu-se.zoom.us/j/65258782784>

Question 4407

Facilitator: Ernesto Gutiérrez (Håkan Nilsson)

• **4357: How can we adopt industrial robots (Off the shelf) that can be used in an activated environment?**

4360: How can we adopt industrial mobile platforms (Off the shelf) that can be used in an activated environment?

Q ESS: How can we make use of autonomous vehicles, robots and devices to enable inspection of areas that people cannot enter?

Representatives:

Faraz Amjad (GSI Helmholtz Center for Heavy Ion Research)

Scientists:

Alina Andersson, Max IV
Anders Robertsson, LU
Faraz Khavari, UU
Iain Sutton, ESS
Melike Babucci, UU
Peter Berntsson, AIT
Raazesh Sainudiin, UU
Roberts Joffe, LTU
Ekaterina Osipova, LTU

Room 3

<https://uu-se.zoom.us/j/64956945783>

Question 4335

Facilitator: Adam Wikström (Mike Olsson)

• **How to optimize an assembly for Hipping and to choose adequate parameters?**

Representatives:

Rui Franqueira Ximenes (CERN)

Scientists:

Linus Roslund, Max IV
Mohammad AL-Najdawi, Max IV
Oscar Karlsson, Bodycote
Tero Taipale, Bodycote
Thomas Berglund, MTC Powder Solutions
Ethan Sullivan, KTH
Adam Wikström, LTU

11:00-12:00 Room 1

<https://uu-se.zoom.us/j/64371147164>

Question 4341

Facilitator: Anna Hall (Sven-Christian Ebenhag)

• **What infrastructure, software and supporting functions are required to maximize the outcome of a collaborations ecosystem for intelligent process control?**

Representatives:

Karin Rathsmann (ESS)

Scientists:

Caterina Doglioni, LU

Mathias Hamberg, VR

Per Andersson, GoalArt

Per Runeson, GoalArt

Sribalaji C. Anand, UU **

Tom Eriksson, Sandvik (SMT)

Lars-Åke Isaksson, LTU Business

Fredrik Bolmsten, ESS

** Probably not present

Room 2

<https://uu-se.zoom.us/j/65258782784>

Question 4332

Facilitator: Fredrik Engelman (Mike Olsson)

• **Is it possible to produce copper-based and Inconel-based beam intercepting parts via AM, whose porosity, thermal and mechanical properties fulfil the application requirements?**

Representatives:

Rui Franqueira Ximenes (CERN)

Scientists:

Anders Bjermo, LU

Camille Pauzon, Chalmers

Mats Persson, Digital Metal

Eduard Hryha, Chalmers

Eshraq Al-Dmour, Max IV

Haiyang Yu, UU

Linus Roslund, Max IV

Mohammad AL-Najdawi, Max IV

Sepehr Hatami, RISE

Thomas Berglund, MTC Powder Solutions

Ulf Jansson, UU

Karl Åhnberg, Design Office

Ethan Sullivan, KTH

Bilen Emek Abali, UU

Room 3

<https://uu-se.zoom.us/j/64956945783>

Question 4483

Facilitator: Patrik Carlsson (Håkan Nillson och Adam Wikström)

• **Q4375: Can we improve the workflow inside the hot cell to reduce the amount of waste?**

Q4372: Can we develop technologies to simulate a hot cell environment with

Representatives:

Christos Karagiannis, FAIR

Scientists:

Melike Babucci, UU

Anna Syberfeldt, Högskolan Skövde

Gauti Asbjornsson, Chalmers

Solomon Oyelere, LTU

Adam Wikström, LTU

13.00-14.00 Room 1

<https://uu-se.zoom.us/j/64371147164>

Question 4353

Facilitator: Fredrik Engelmark (Sven-Christian Ebenhag)

- How can we use the perovskite crystal structure for the development of fast particle (high-energy) detectors?

Representatives:

Richard Jacobsson (CERN)

Scientists:

Andreas Larsson, LTU

Carin Eklöf-Österberg, Big Science Sweden

Edmond Armay, LU

Faraz Khavari, UU

Gerrit Boschloo, UU

Olle Lundberg, Evolar AB

14:30-15:30 Room 1

Room 2

<https://uu-se.zoom.us/j/64371147164>

<https://uu-se.zoom.us/j/65258782784>

Question 4329

Facilitator: Ernesto Gutiérrez (Fredrik engelmark)

- **How to efficiently machine pure Tungsten by turning?**

Representatives:

Rui Franqueira Ximenes (CERN)

Scientists:

Anders Bjermo, LU

Eshraq Al-Dmour, Max IV

Haiyang Yu, UU

Linus Roslund, Max IV

Mike Olsson, Big Science Sweden

Karl Åhnberg, Design Office

Ulrika Palmqvist, Luma Metall AB

Question 4347

Facilitator: Anna Hall (Sven-Christian Ebenhag)

- **How can we enhance understanding of underlying processes in a highly complex and increasingly autonomous machine?**

Representatives:

Karin Rathsman (ESS)

Scientists:

Alina Andersson, Max IV

Anders Robertsson, LU

Faraz Khavari, UU

Per Andersson, GoalArt

Raazesh Sainudiin, UU

Sribalaji C. Anand, UU

Ekaterina Osipova, LTU

Lars-Åke Isaksson, LTU Business

Fredrik Bolmsten, ESS

Olof Mogren, RISE

<https://www.bigsciencesweden.se/news-media/programme-2021/>



SWEDEN'S OFFICIAL BIG SCIENCE
INDUSTRIAL LIAISON OFFICE (ILO)



News & Media

News

Newsletter

Press releases

Publications

Programme

AIMday Big Science Technology 2021

Technical support • During the day, you can contact [Anette Persson Stache](#), +46 704 25 04 33 or [Lennart Gisselsson](#), +46 702 11 69 83 if you run into problems.

They are also available in the support zoom: <https://uu-se.zoom.us/j/63033566822>

09:00-09:25

Welcome and introduction

Anna Hall, Director Big Science Sweden and Fredrik Engelmark, ILO for CERN

Conference room (always open)

<https://uu-se.zoom.us/j/63033566822>

09:30-10:30

Question 4344

How can we enhance the quality of control system data for machine learning purposes in order to lower costs for both data handling and computing?

Room 1

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09:30-10:30

Question 4407

What happens after...?



PRE-STUDY

Notification of interest

Pre-study funding after an initial meeting at AIMday Big Science Technology gives you an opportunity to further plan a collaboration and possibly carry out some initial studies together.

Notification of interest shall comprise a maximum of 1-2 pages. The amount for each pre-study is up to SEK 75 000, including overhead costs.

Company:

Company representatives:

Question ID (number):

Responsible academic researcher for the pre-study application:

Pre-study proposal (possible way to continue collaboration around the question raised by the company/organisation):

Signature
Responsible academic researcher

Signature
Company/organisation representative

For evaluation criteria and terms for the application, please see the back of this page.



Terms for the application

1. Academic researcher and representatives from the company/organisation must have participated in the AIMday Big Science Technology event arranged by Big Science Sweden and Uppsala University Innovation.
2. The collaboration is new – no previous formalised collaboration around the current issue has taken place between the company/organisation and the academic researchers involved.
3. The company/organisation must contribute with approximately 50% of the resources to the project. This contribution may be in kind.
4. If the application is granted, the funding will be paid to the researcher's department for the researcher's costs related to the pre-study.
5. The researchers involved may not have a conflict of interest towards the company/organisation.

Evaluation criteria

1. To what extent is the pre-study characterized by mutual benefit for the parties?
2. What is the feasibility of the pre-study?
3. What is the potential for continued collaboration?

Next step – Pre-Study?

Links

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- Summary and next step: <https://uu-se.zoom.us/j/63033566822>

Support during the day

- anette.stache@uu.se +46 704 25 04 33
- lennart.gisselsson@bigsciencesweden.se, +46 702 11 69 83
- <https://uu-se.zoom.us/j/63033566822>



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- Summary and next step: <https://uu-se.zoom.us/j/63033566822>

- Allmän - Anette
- Room 1 - Fredrik
- Room 2 - Olle <https://katalog.uu.se/empinfo?id=N18-2608>
- Room 3 - Jenny <https://katalog.uu.se/empinfo?id=N96-4746>
-