

Collaboration Strategies & Opportunities @ CERN

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TE department Head

Introduction

- Collaborations are NOT commercial contracts; they define a frame in which a third-party institution (Research Centre or University or equivalent) works together with CERN to develop some technologies of common interests.
- Collaborations require investing in personnel and in material on the side of CERN partners.
- Collaborations are pluriannual agreements which implies some stability and common strategic interests.

Entry page to ATS Collaborations

<https://ats.web.cern.ch/about-ats>



CERN Accelerating science

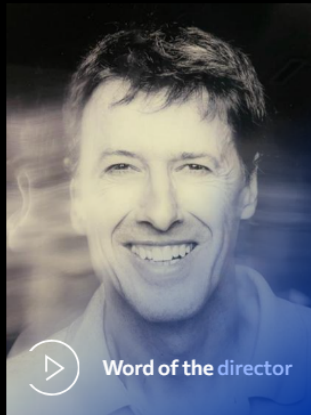
Sign in Directory



Accelerators & Technology Sector

HOME ABOUT ATS ORGANISATION PROJECTS SUSTAINABILITY SOCIETAL IMPACT

About ATS Mission & Responsibility Safety Culture Collaborations and Partnerships Educational and Outreach Resources



Word of the director

Welcome to the Accelerator and Technology Sector at CERN, where we are dedicated to pushing the boundaries of high-energy physics research through the exploitation of our extensive accelerator complex and cutting-edge accelerator technology. As the Director of ATS, I am honored to lead a talented team of scientists, engineers, and technicians who are committed to help advance our understanding of the universe and shape the future of scientific discovery.

In ATS, we believe that scientific progress is a collaborative effort that requires diverse perspectives and skills. We are proud to partner with international organizations, universities, and research centers to tackle some of the challenges of our domain. Our work is not only using technology to unlock the secrets of nature, but it's also about inspiring the next generation of scientists and engineers. Through science education and outreach initiatives, we aim to share our passion for discovery with people of all ages and backgrounds.

Thank you for your interest in the Accelerator and Technology Sector. We are happy to share our journey with you.

Mike Lamont
Director for Accelerators & Technology

ATS Collaborations & Partnership

<https://dev-ats.web.cern.ch/activities#european-projects>

Introduction

Projects

Accelerators R&D

European Projects



HL-LHC

Oliver Brunning

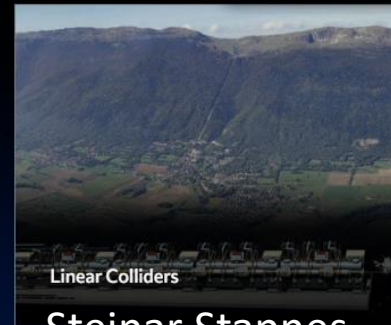
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FCC

Michael Benedikt

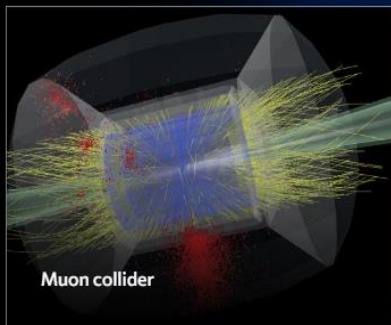
+ FCC



Linear Colliders

Steinar Stapnes

+ Linear Colliders



Muon collider

+ Muon collider

Daniel Shulte



Awake

+ Awake

Edda Gschwendtner



PBC

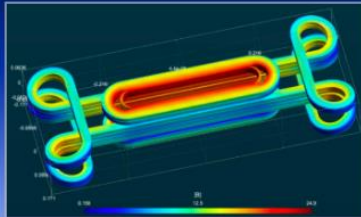
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Gianluigi Arduini

Accelerator R&D

<https://dev-ats.web.cern.ch/activities#european-projects>

Accelerator R&D



HFM



SRF

Ezio Todesco

Frank Gerigk

Horizon Projects

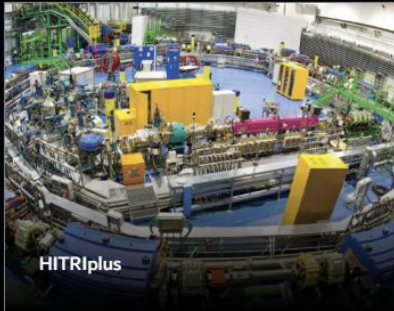
<https://dev-ats.web.cern.ch/activities#european-projects>



Introduction Projects Accelerators R&D European Projects



Horizon Projects



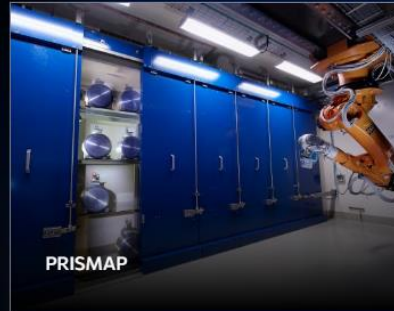
HITRIplus

+ HITRIplus



IFAST

+ More about IFAST



PRISMAP

+ PRISMAP



RADNEXT

+ RADNEXT



FCC-IS

+ FCC-IS

How to get onboard (I)

- Collaborations are not a contract for support nor service contracts.
 - **ATS Collaborations & Partnership**
These are international collaborations which run under MoU frames. The **entry point is the Project leader** who can respond to all your questions.
 - **Accelerator R&D**
These initiatives are done under the control of the LDG who steer the strategy and priorities. Both runs with a **MoC which need to be signed by international CERN partners**.
 - **Horizon Projects**
CERN behave as a normal partner, often contacted and asked to join by a bunch of external partners.
The **entry point are the external partners** who promote these initiatives (in some cases TIARA).

CERN three main types of collaborations (I)

- **R&D-driven – Technological Experts**

- In the execution of its R&D mission for future accelerator applications, CERN needs on few occasions renown experts in CERN complementary research domains.
- This is often the case of worldwide recognised experts for outstanding contributions through years to technological domains, with capacities to welcome and lead Doctoral Students.
- Some examples: Ultra-High vacuum technologies and related coatings and surface treatments, superconducting material, instrumentation for cryogenics at very low temperature, etc.

CERN three main types of collaborations (II)

- **Expert Manpower support (limited duration)**
 - CERN needs additional expert support during long shutdown periods (2-3 years duration) to be able to complete the maintenance and consolidation works.
 - This is not a support/service contract since looking for highly specialised personnel having done already similar types of expert works in their Universities or research Centres.
 - Examples: Ultra-High vacuum experts, Electrical Quality Assurance Experts for superconducting magnet and related circuits, etc.

CERN three main types of collaborations (III)

- **Strategic accelerator-driven R&D**

- CERN is responding to the European Strategy for Particle Physics (ESPP) with some feasibility studies and/or some advanced technological research.
- Often, the research are so important that CERN needs the support from national Research Centers and/or technical Universities to share part of the works.
- The overall strategy and objectives is defined and supervised by the Laboratory Director's Group (LDG) which reports to CERN Council.
- Universities and Research Centers collaborating with CERN have demonstrated long term strategies in technical domains related to accelerator technologies, and often have signed the MoC (Memorandum of Cooperation) with the studies, projects or related initiatives.
- Examples are: High Field Magnets (HFM), Superconducting RF for accelerating cavities (SRF), Quantum Computing (QTI), etc.

Conclusions

- CERN is open to consider collaborations with relevant Research Centres or University which have **demonstrated clear medium-long term strategies on accelerator related R&D.**
- CERN partners shall be able to seek for complementary funding since collaborating with CERN is not like a Support/Service contract. **Half of the costs are to be shared by CERN partners.**
- Please don't hesitate to contact us for more details.