

Doing Business with CERN LIAA visit to CERN

Charles Carayon

26 September 2024



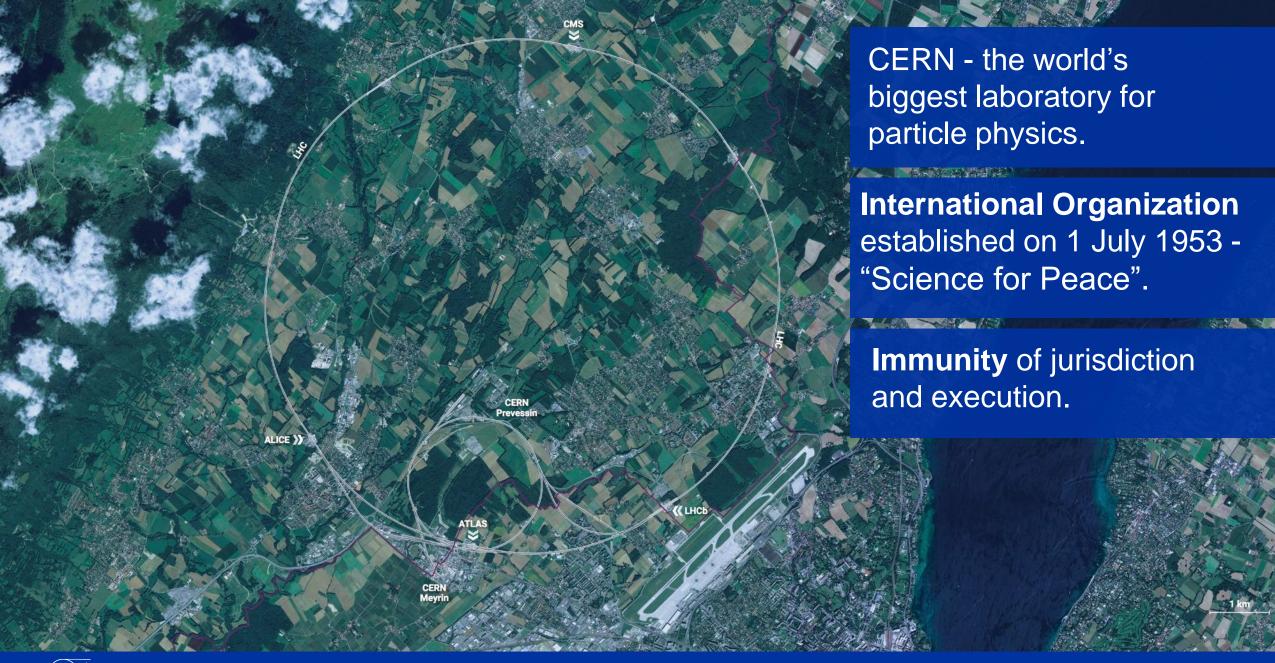
AGENDA

- Introduction
- How Business interacts with CERN
- Procurement Rules
- Impact of Doing Business With CERN
- Procurement Website and Contacts
- Forthcoming tenders



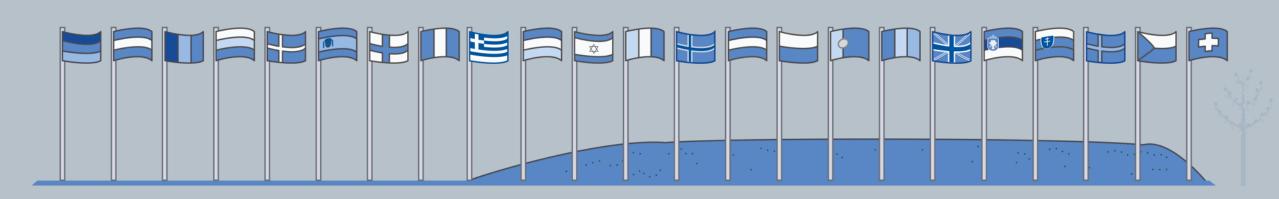








CERN is entitled to establish its own internal rules necessary for its proper functioning, including:



Procurement Rules

Safety Rules

Staff Regulation of its own personnel



In 1954 CERN had 12 Member States Today CERN has 24 Member States



24 Member States

2 Associate Member States in the pre-stage to membership

- 8 Associate Member States
- 6 Observers (Russia suspended)

Yearly budget ~ 1300 MCHF

~ 2,676 Staff members

~ **2,000** contractors' employees

from **77** countries

~ **13,000** physicists /users



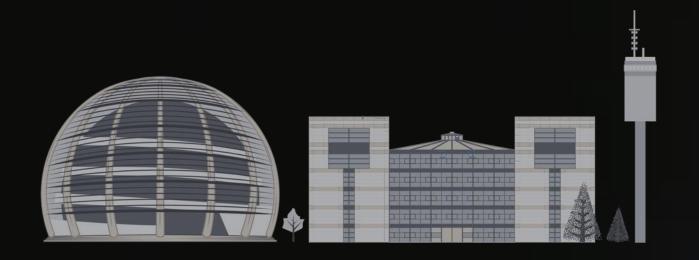
Yearly Budget (contributions 2024)*

| | Country | Percentage of Total | Amount (CHF) |
|----|----------------|---------------------|--------------|
| _ | Germany | 20.57% | 258 247 250 |
| | United Kingdom | 14.69% | 184 447 050 |
| | France | 13.08% | 164 153 900 |
| | Italy | 9.61% | 120 700 800 |
| 34 | Spain | 6.83% | 85 696 800 |
| | Netherlands | 4.56% | 57 293 700 |
| + | Switzerland | 3.65% | 45 845 900 |
| | Poland | 3.04% | 38 196 850 |
| • | Belgium | 2.71% | 34 052 750 |
| | Sweden | 2.60% | 32 589 450 |
| = | Austria | 2.18% | 27 376 050 |
| * | Israel | 2.17% | 27 209 350 |
| # | Norway | 2.14% | 26 820 150 |
| == | Denmark | 1.81% | 22 730 650 |
| 0 | India* | 1.41% | 17 709 200 |
| + | Finland | 1.32% | 16 541 250 |
| | Romania | 1.29% | 16 172 600 |
| | | | |

| | Country | Percentage of Total | Amount (CHF) |
|----------|----------------------|---------------------|---------------|
| | Czech Republic | 1.15% | 14 469 200 |
| ® | Portugal | 1.08% | 13 515 450 |
| | Greece | 0.97% | 12 181 000 |
| | Hungary | 0.73% | 9 128 950 |
| • | Slovakia | 0.52% | 6 553 550 |
| C. | Republic of tüRkiye* | 0.38% | 4 770 750 |
| | Bulgaria | 0.36% | 4 580 000 |
| ğ | Serbia | 0.27% | 3 444 800 |
| - | Slovenia** | 0.19% | 2 325 100 |
| C | Pakistan* | 0.16% | 2 018 650 |
| | Estonia | 0.12% | 1 462 050 |
| 5 | Cyprus** | 0.09% | 1 116 000 |
| | Latvia* | 0.08% | 1 066 250 |
| | Ukraine* | 0.08% | 1 045 600 |
| | Croatia* | 0.08% | 1 000 000 |
| | Lithuania* | 0.08% | 1 000 000 |
| | Total | 100% | 1 255 461 050 |

*Brazil joined as an Associate Member State on 13 March 2024 (10.3M CHF)





How Business interacts with CERN



How Business Interacts With CERN

Procurement Contracts

Collaborations via Universities

Technologies and Know How





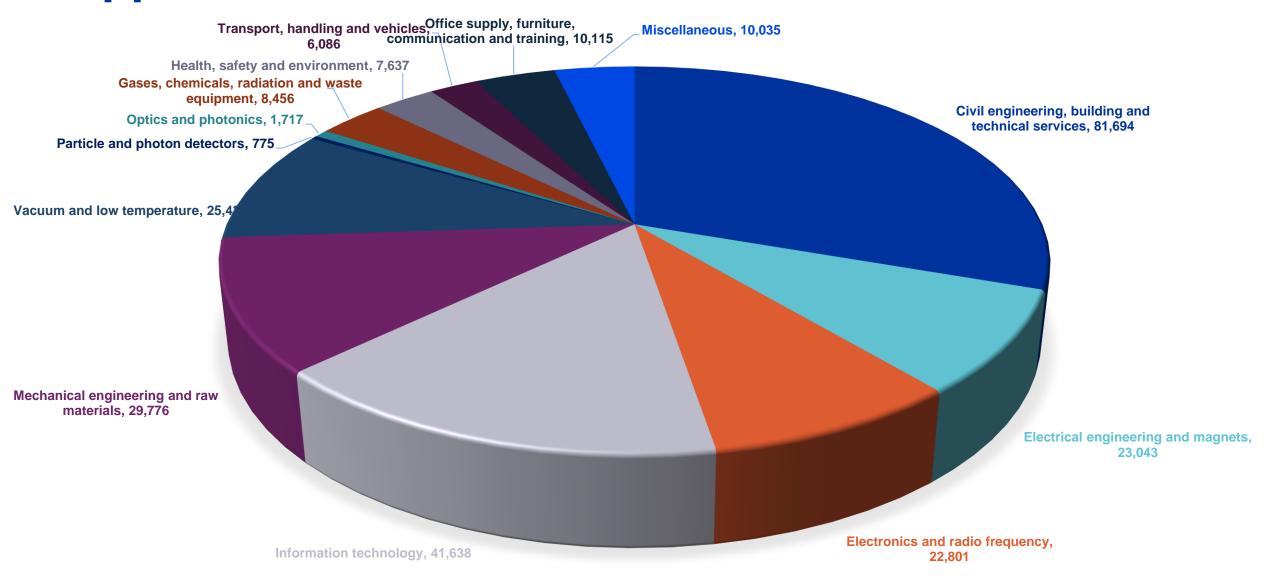


Procurement Expenditure





Supplies (254MCHF spent in 2023 – CERN budget only, kCHF)







- **Civil engineering:**
 - Construction
 - Renovation of buildings
 - Metallic structures
 - Earthworks
 - Roads
- Cooling and ventilation equipment





- Electrical engineering and magnets
 - Transformers
 - Switchboards and switchgear
 - Cables
 - Automation
 - Power supplies
 - Magnets





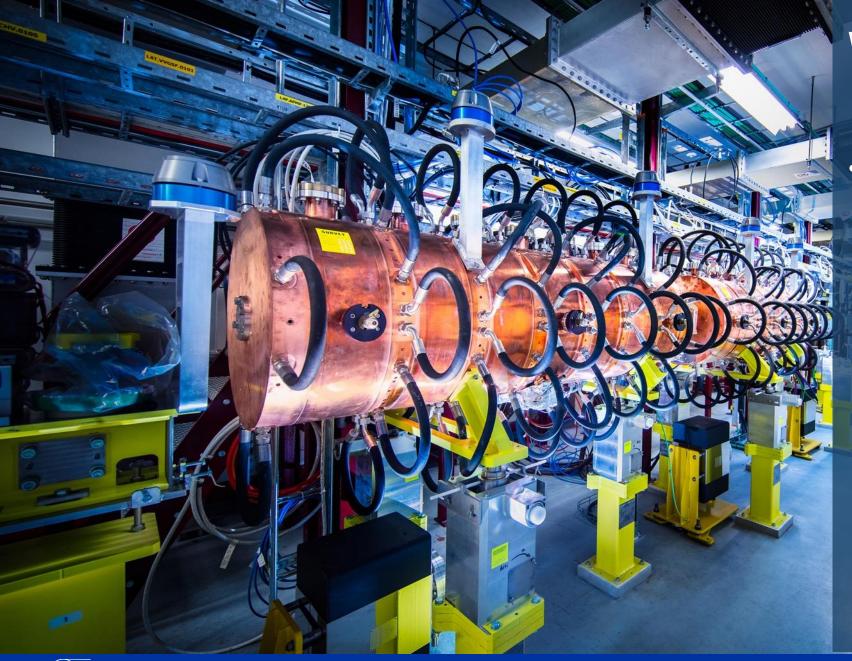
- Information Technology
 - Computing systems
 - Servers
 - Software
 - Network equipment
 - Personal computer equipment





- Mechanical engineering and raw materials:
 - Machining
 - Sheet metal work and arc welding
 - Special fabrication techniques
 - Raw materials, finished and semi-finished products
 (plates, pipes, etc.)
 - Offsite engineering and testing





- Electronics and radiofrequency:
 - Electronic components (active, passive)
 - PCBs and assembled boards
 - LV and HV power supplies
 - Radiofrequency plants
 - Amplifiers





- As well as:
 - Cryogenic and vacuum equipment
 - Optics and photonics
 - Particle and photon detectors
 - Health and safety equipment,
 - Transport and handling equipment
 - Office supply, furniture
 - Industrial services on the CERN site



Current project - upgrade of the LHC to High Luminosity





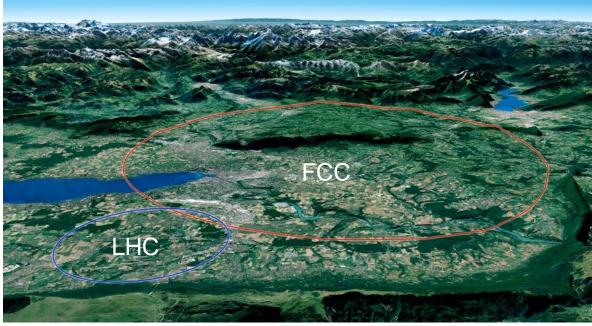
Two biggest projects for future of particle physics



Future Circular Collider (FCC)

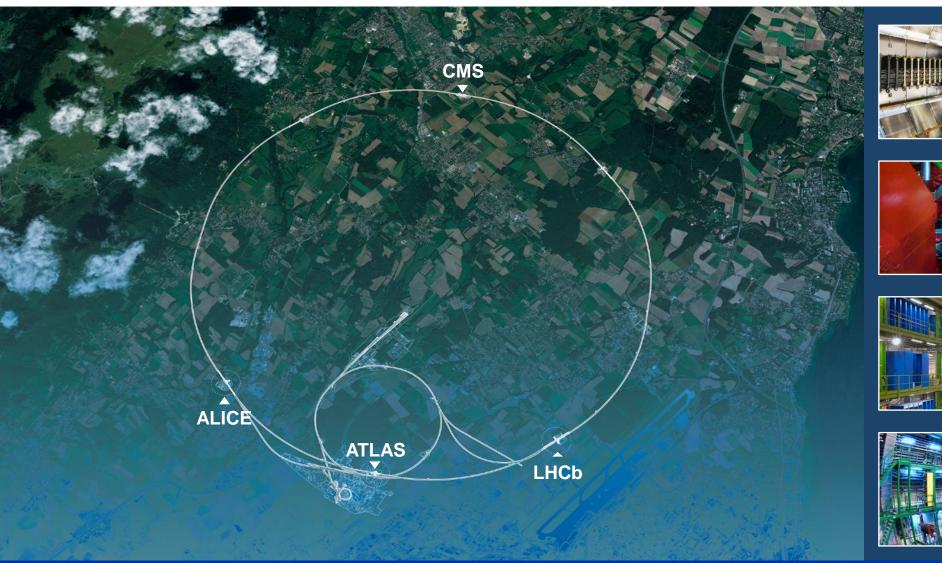


- New technology magnets → 100 TeV pp collisions in 100km ring
- e⁺e⁻ collider (FCC-ee) as 1st step?





We also buy for the LHC experiments













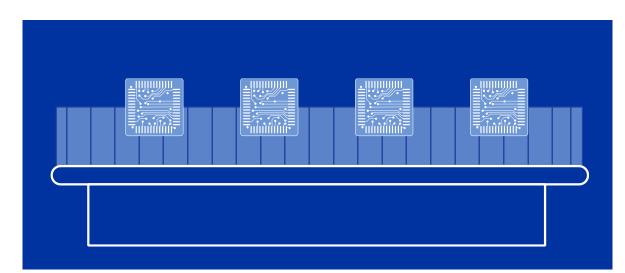
How do we buy?

Off-the shelf or non-standard products which can be produced with existing manufacturing techniques or technologies:

Functional specification

Non-standard products where industry has neither the required know-how nor the interest to develop and design the products:

Build-to-Print specification









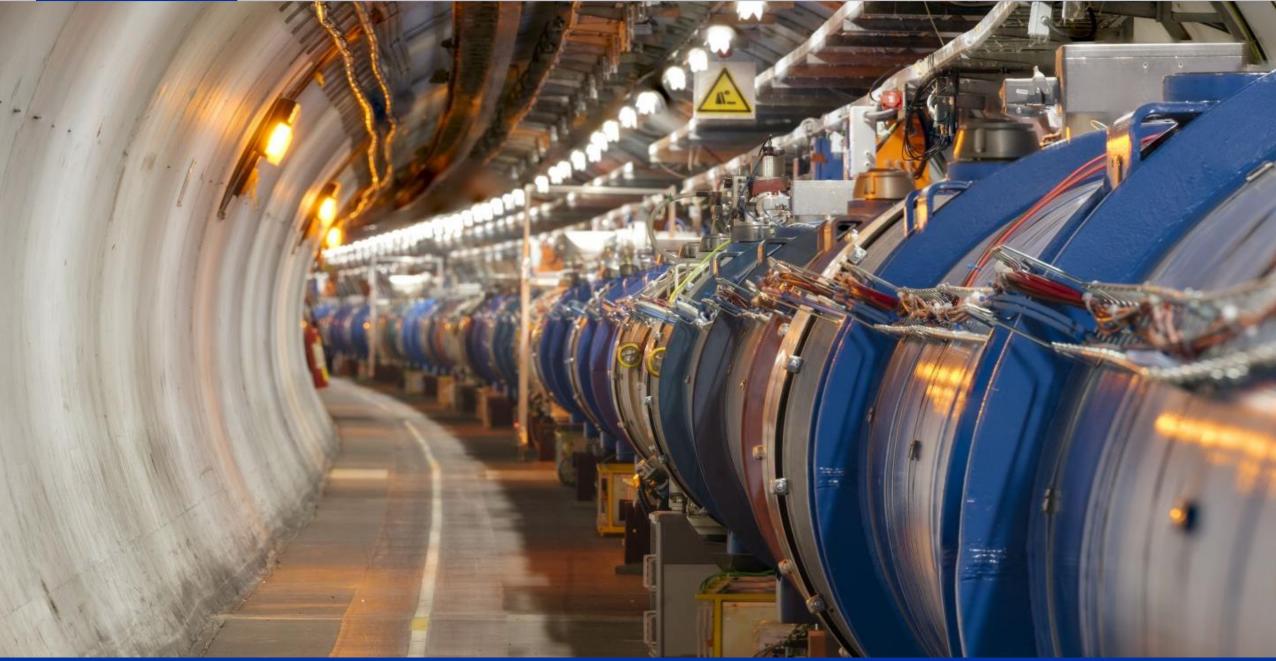
How Business Interacts With CERN

Procurement Contracts

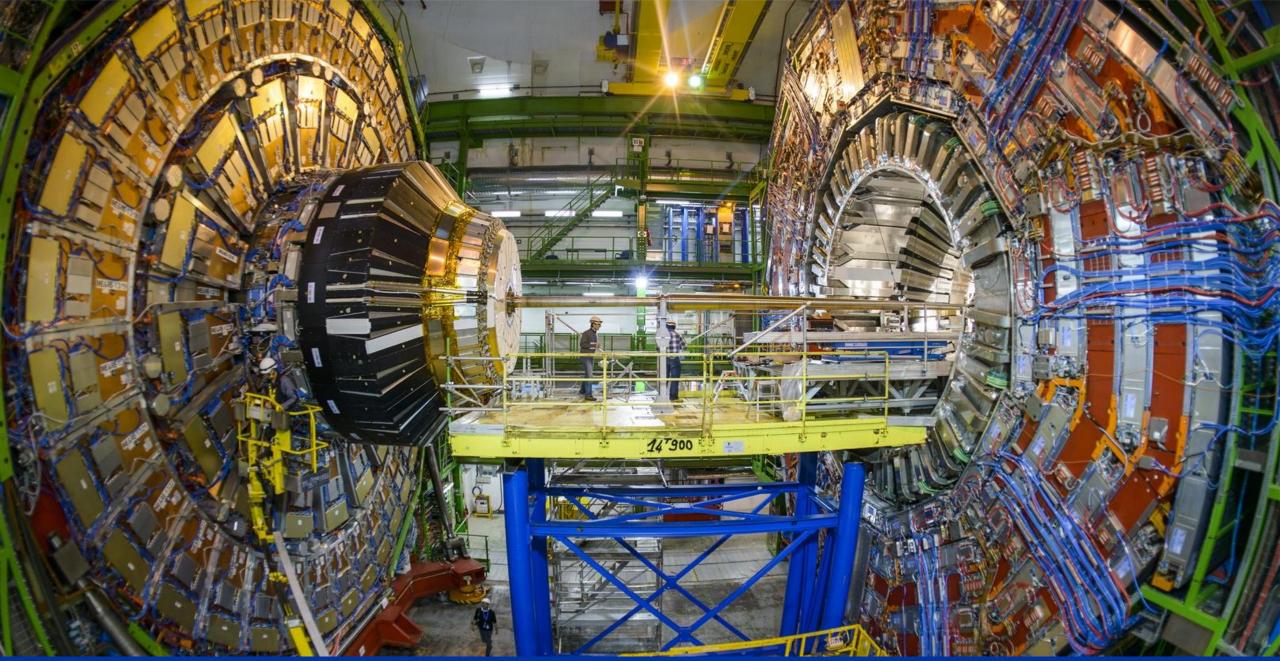
Collaborations via Universities

Technologies and Know How











Collaborations with Universities

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.

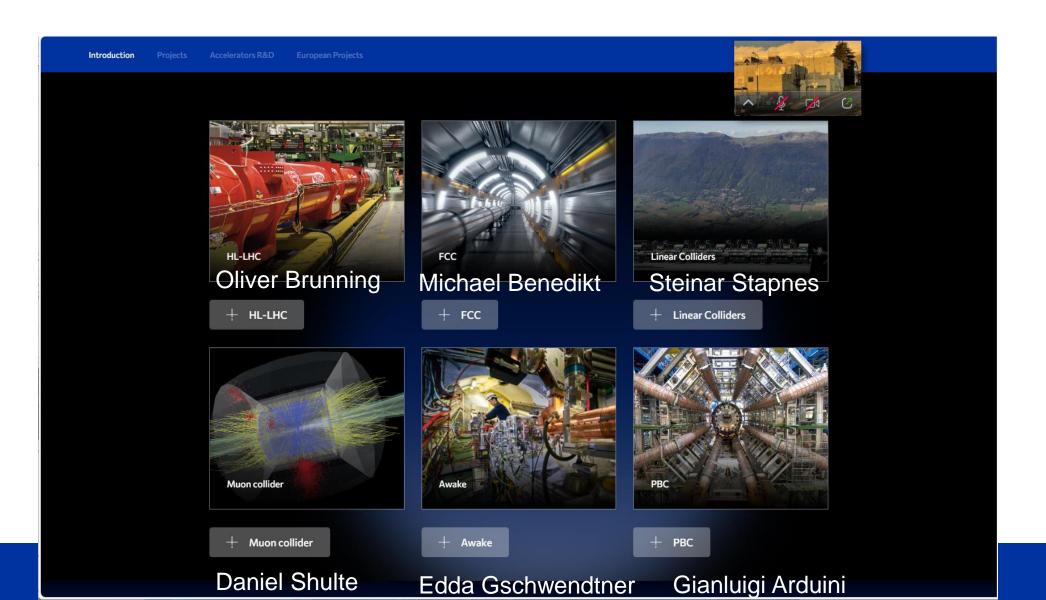
Collaborations require investing in personnel and in material on the side of CERN partners.

Collaborations are pluriannual agreements which implies some stability and common strategic interests.



ATS Collaborations & Partnership

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



Accelerator R&D*

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



Ezio Todesco

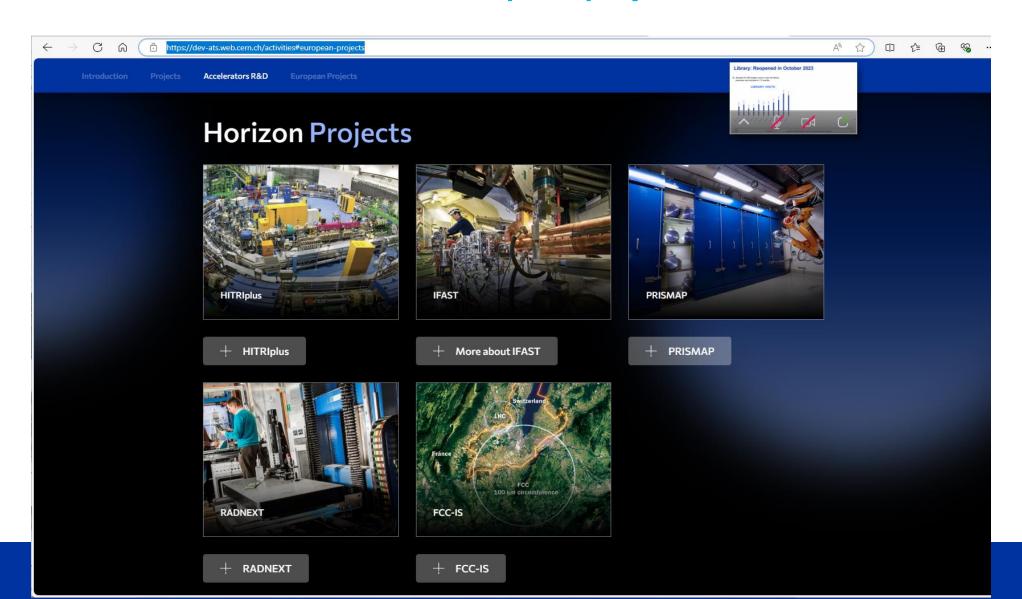
Frank Gerigk

*Other CERN sectors also sign collaboration agreements!



Horizon Projects

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



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 <u>additional expert support during long shutdown periods (2-3 years duration)</u> 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 <u>feasibility studies</u> and/or some advanced technological research.
- Often, the research are so important that CERN needs the <u>support from national Research Centers</u> 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.

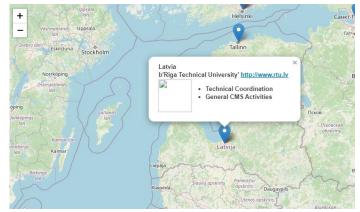
CERN partners shall be able to seek for complementary funding since collaborating with CERN is not like a Support/Service contract. Half of the costs are to be shared by CERN partners.

Please don't hesitate to contact us for more details.



Collaborations with Experiments' institutes

CMS collaboration





ALICE, ATLAS, LHCb, no LV member yet







Businesses can approach CERN via Experiments!



How Business Interacts With CERN

Procurement Contracts

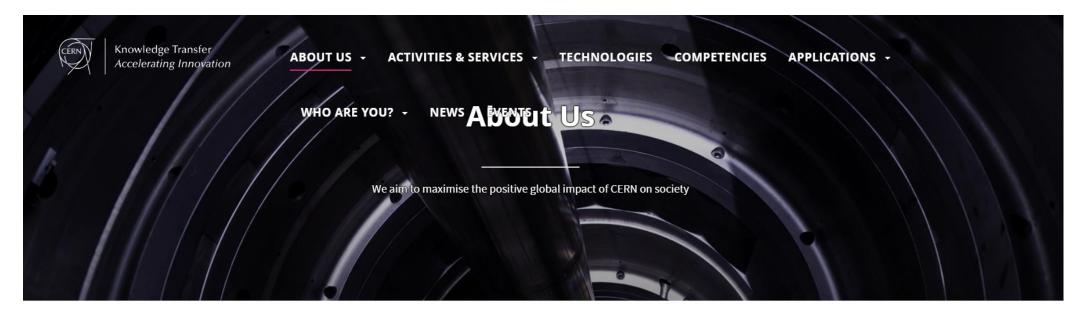
Collaborations via Universities

Technologies and Know How



Technologies and know-how

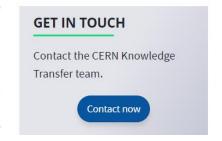
https://kt.cern/about-us



Our Mission

Places like CERN contribute to the kind of knowledge that not only enriches humanity, but also provides the wellspring of ideas that become the technologies of the future.

— Fabiola Gianotti, Director-General of CERN

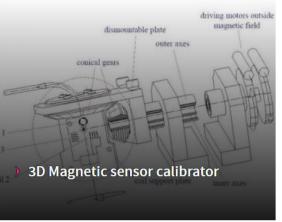


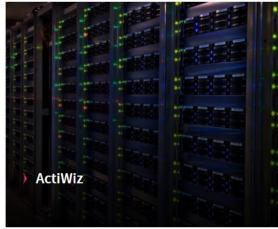


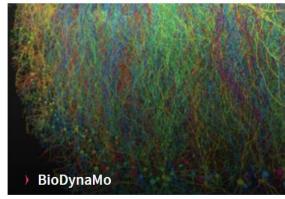
Technologies and know-how

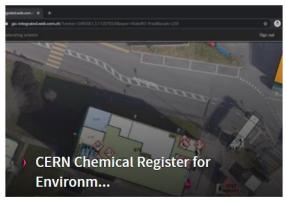
https://kt.cern/about-us







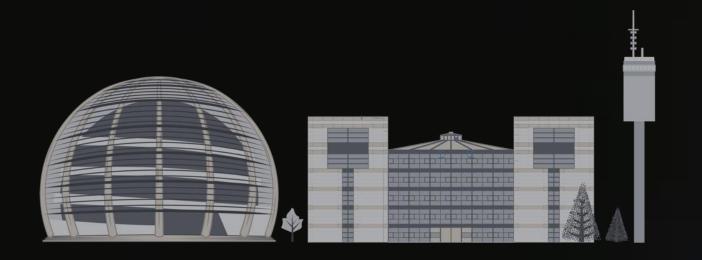












PROCUREMENT @CERN the rules



The Procurement Service

Mission

The Procurement Service (PS) procures all supplies and services for CERN

Meeting the specified and financial, technical, environmental and delivery requirements

Keep overall costs for CERN as low as possible and to ensure the most advantageous use of CERN's resources

While achieving balanced industrial return for CERN Member States

Respecting CERN Procurement Rules



Principles of the Procurement Rules (1/4)

1

Transparency and Impartiality

2

Tenders open to Member States only



Objectivity and equal treatment: tendering packages are objective and impartial



Principles of the Procurement Rules (2/4)

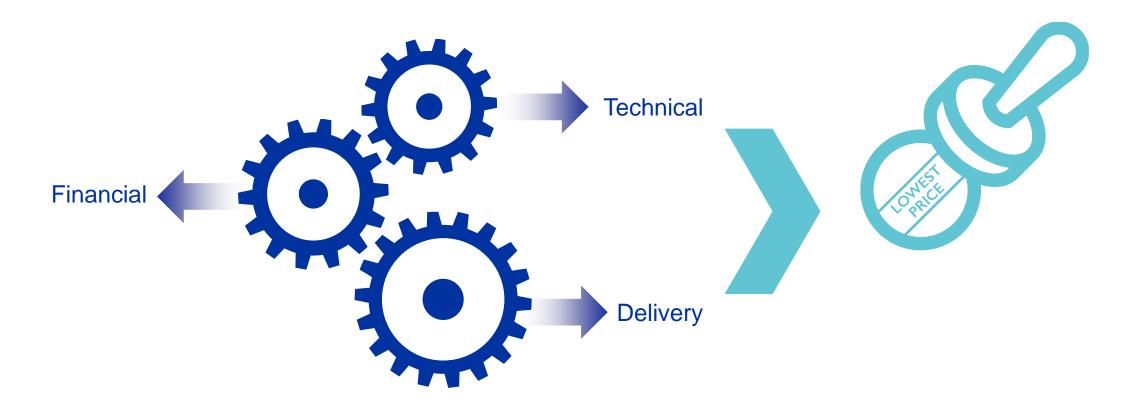
Selective tendering procedures: CERN's tendering procedures are not open to any interested firms

Confidentiality: Opening and evaluation of bids as well as negotiations are not public



Principles of the Procurement Rules (3/4)

Award on Lowest compliant bid basis
Most commonly for Supply contracts





Principles of the Procurement Rules (4/4)

Award on <u>Best Value For Money</u> basis Most commonly used for industrial service contracts





Requirements between 10,000 and 400,000 CHF

"Price enquiry" (Demande d'Offre - DO)

- Submission deadline: 4-6 weeks from date of dispatch;
- All price enquiries above 50,000 CHF are also sent to the Industrial Liaison Officers (ILOs) for information;
- Price enquiries consist of:
 - Technical specification and annexes;
 - Tender form (and a technical annex optional);
 - CERN's General Conditions (contracts, invitations to tender, safety, etc.)
- Price enquiries between 200,000 400,000 CHF announced on CERN's procurement website, see
 "Business Opportunities"







Requirements exceeding 400'000 CHF (1/2)

"Market Survey" (MS)

- Prior announcement on CERN's procurement website, see "Business Opportunities"
 - At this stage, interested firms are encouraged to contact CERN in order to have a clear understanding of the requirement, allowing them to begin their organization ahead of the tendering process.



- Market surveys consist of:
 - "Technical Description" and;
 - "Qualification Questionnaire" (financial and technical).
- Submission deadline: 4 weeks, or more if the MS is still online.



Requirements exceeding 400'000 CHF (2/2)

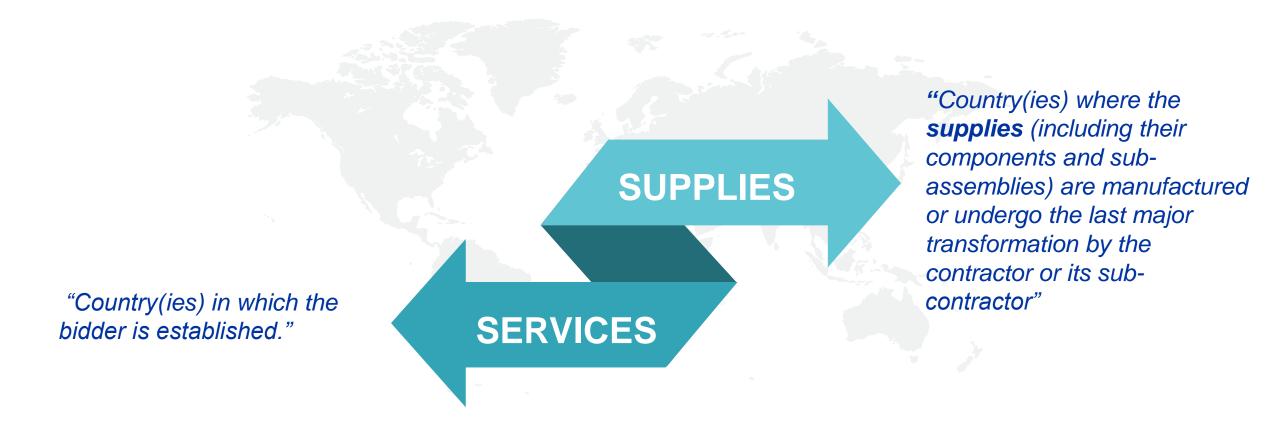
"Invitation to tender" (IT)

- Sent to qualified and selected firms only;
- Submission deadline: 4 weeks from date of dispatch (with a longer period for more complex requirements);
- Firms shall ask all necessary questions in writing to understand all requirements and prepare a bid that best matches CERN's needs;
- All invitations to tender are sent to the Industrial Liaison Officers (ILOs) for information;
- Bids shall be submitted via CERN's e-tendering application.





Country of origin





Country of origin – Why do we need to know?

RETURN TO THE MEMBER AND ASSOCIATE MEMBER STATES

CERN's 67-year history and extraordinary record of scientific and technological accomplishments would not have been possible without the sustained support of its Member States. To ensure that this support continues, it is imperative that CERN constantly expands the benefits it brings to the Member and Associate Member States through all dimensions of its work. Therefore, over the coming five-year period the Management will ramp up its efforts to improve these benefits in all their facets, through a number of targeted actions.



The support from Member and Associate Member States underpins CERN's extraordinary record of scientific and technological achievements. (Image: CERN)

Industrial Return to our Member States and Associate Member States is a key organisational objective and therefore we need to record this in order to better manage our efforts to achieve our goals in this respect



Industrial return coefficient

Industrial return coefficient

For Supply contracts and for a 12-month period starting on 1st March, defined as:

"The ratio between a Member State's percentage share of the value of all Supply contracts and that Member State's percentage contribution to the CERN Budget over the same period".

Over a 4-year period:

Poorly balanced (PB): < 1

Well balanced (WB): ≥ 1

Status definition

% expenditure in the MS

Return Coef.=

% contribution to CERN budget for this MS







Doing business with CERN: the facts

supplier survey (669 suppliers in 33 countries, 2017):



found or opened a new market to address

62% used CERN as a marketing reference



Doing business with CERN: the facts

CERN

Using CERN as a marketing reference improve the reputation as suppliers

supplier



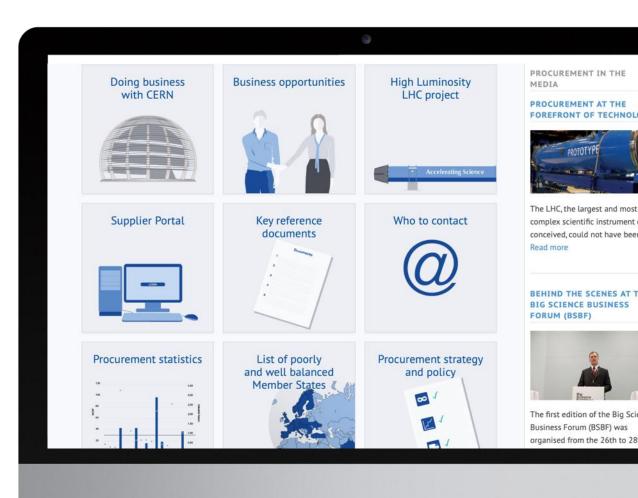


Doing business with CERN: Success Factors

- Register your company on the CERN Suppliers Portal.
 - https://procurement.web.cern.ch/
- Connect to the ILO team (Contact details later)
- Look out for forthcoming opportunities, large and small:
 - https://forthcoming-ms.app.cern.ch/#!/
- Ask questions if needed
- Complete paperwork on time
- Be mindful of adjudication methods.....lowest compliant bid or quality criteria
- Robust understanding of your technologies and pricing
- Readiness to adapt production techniques and meet demanding tolerances



Procurement Website & Contacts





Website of the Procurement Service

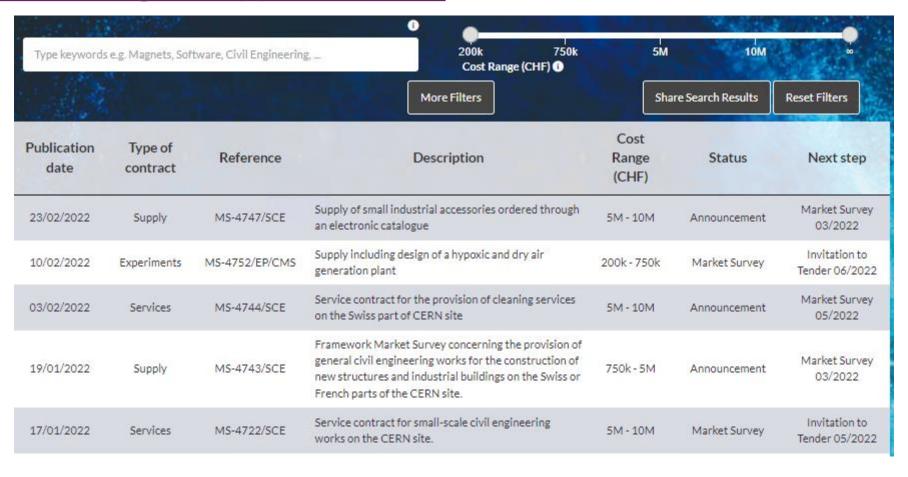
http://procurement.web.cern.ch

Procurement and Industrial Services Group HOME - CERN PERSONNEL - INDUSTRIAL LIAISON OFFICERS - GROUP MEMBERS) Business Opportunities) Supplier Portal Procurement Process Law applicable to contractors') Key Reference Documents) List of Poorly and Well) Procurement strategy and Balanced Member State... policy



CERN Shopping List

https://forthcoming-ms.app.cern.ch/#!/





Register in the Suppliers Portal

MANDATORY

for all exchanges with CERN, in particular to:

- Be visible for future opportunities
 (with the procurement codes you have indicated),
- Receive and follow-up orders,
- Send invoices.

Suppliers Portal

Welcome to CERN's eProcurement platform

https://procurement.cern.ch/aspx/Home

Using this platform, you will be able to receive orders, manage the delivery of supplies and send invoices for processing.

If you are having trouble registering your firm, please consult this video tutorial or the French version under tutoriel.

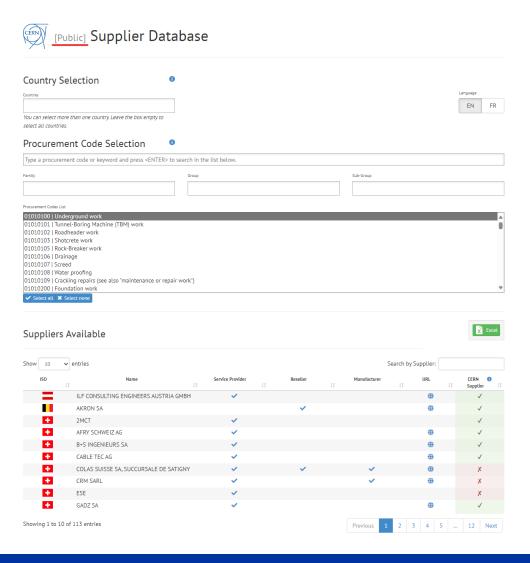
Once you have registered your firm, you will be able to log on to the platform to manage your firm's profile and contact details.

If you have any further questions, please contact CERN's eProcurement platform support team at Supplierdb.Support@cern.ch.



Team up with local contractors!

https://dir-ext-prod.cern.ch/pentaho/api/repos/%3Apublic%3ASupplier%20Database%3ADashboard.wcdf/generatedContent





Key CERN Contacts

https://procurement.web.cern.ch/contact/who-contact-cern

Procurement Contacts

) Procurement Service Management (IPT-PI)

The Procurement group is divided in the following sections:

- · Strategy, Quality and Communication (IPT-PI-SQ);
- · Orders, Energy, Stores and Industrial Outreach (IPT-PI-OE);
- Supplies (IPT-PI-SU);
- . Civil Engineering and Services (IPT-PI-CS).

Additionally, the Procurement Legal unit forms part of the Procurement group.

Strategy, Quality and Communication (IPT-PI-SQ)

The Strategy, Quality and Communication section is in charge of:

- . Strategy: statistics and reports, strategic tools, group projects and other special contracts.
- Quality Assurance: training, templates, FC papers approval, update of rules and procedures...
- Communication: social media and webpage content and maintenance
- · Pension Fund, Insurance, Collaboration agreements

) Orders, Energy, Stores and Industrial Outreach (IPT-PI-OE)

The Orders, Energy, Stores and Industrial Outreach section is in charge of:

- Orders below 50 kCHF. Stores orders.
- Energy: electricity, gas, water and SIG contracts.
- Other projects: DUNE, Dark Side.
- Outreach: BSBF, MICE, internal and external presentations, Liaison with ILOs, long term needs and strategic sourcing.



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Big Science Business Forum 2024

https://www.bsbf2024.org/

Meet Europe's largest Big Science Organizations



European XFEL

















Big Science Business Forum 2024



GCC - Generali Convention Center



Last but not least – CERN Procurement on LinkedIn

Recently launched – <u>Follow us</u> for news and information on key procurement processes and activities at CERN









Upcoming Tenders at CERN

IPT-PI 26-09-2024



Cooling & Ventilation, Cryogenics



NA-CONS: BA80 cooling station consolidation and upgrade

Description & Specific Condition:

Design, supply, installation, testing and commissioning of the demineralised water cooling station and water distribution network in BA80.

In order to improve the operability, reliability, availability, maintainability and safety, the demineralised water cooling plant in North Area building BA80 will be subject to consolidation by replacing the aging mechanical equipment. At the same time, the cooling plant capacity will be increased to cope with the additional load required by the new water-cooled Power Converters that will be installed as part of NA-CONS Phase 1 project.

Start of the Contract: Q4 2025

Procurement Code: 01 03 03 00

Cost Range: 1.5MCHF ⇔ 5 MCHF

Planning: MS: Q3 2024

IT: Q4 2024

Contact: laurentiu.vlasceanu@cern.ch





NA-CONS: CT2 cooling upgrade and consolidation

Description & Specific Condition:

Design, supply, installation, testing and commissioning of the 5th cooling tower cell in CT2.

To meet the requirements of the additional load required by the new users that will be installed as part of the NA-CONS project, a 5th cooling tower cell will be added to CT2. This Invitation to Tender will cover the equipment to be installed in the cell, as well as consolidation works to the pumping station.

Start of the Contract: Q1 2026

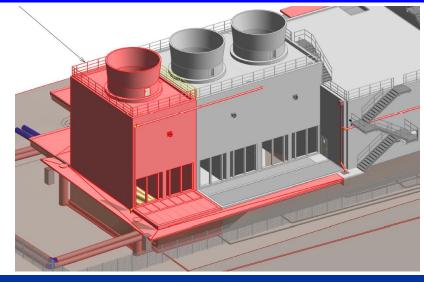
Procurement Code: 01 03 03 00

Cost Range: 400k - 1.5M CHF

Planning: MS: Q4 2025

IT: Q1 2026

Contact: laurentiu.vlasceanu@cern.ch





Cooling system Blanket Purchase Contract

Description & Specific Condition:

5+1+1 years blanket purchase contract.

Design, supply and installation, test and commissioning of cooling systems on the CERN Site.

Several cooling plants will be consolidated or newly installed during and after Long Shutdown 3 both at the level of LHC, HL-LHC and Experiments.

Projects will range from small to medium and large sizes (<40 kCHF, 40-200 kCHF, 200+ kCHF).

All components shall comply with the technical prescriptions.

Procurement Code: 01 03 03 00

Cost Range: >10MCHF

Planning: MS: Q3/4 2024 IT: Q1 2025

Contact: francesco.dragoni@cern.ch







SRF/SA18 Cooling and ventilation systems

Description & Specific Condition:

Design, supply, installation, test and commissioning of all the HVAC systems and the air treatment system in the new building SA18 at Point 1.8 of the LHC.

Key conditions:

- Experience in the installation of HVAC systems of similar size and complexity.
- Experience in the installation of air treatment systems with wet scrubbers.
- Experience in the execution of similar projects in accordance with the European and French regulations.

Start of the Contract: Q3 2026

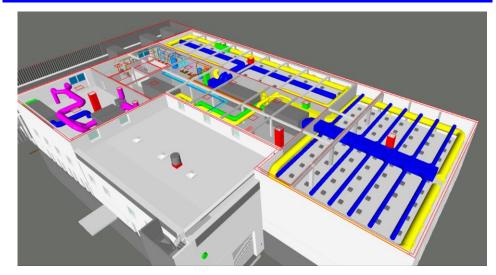
Procurement Code: 01 03 00 00

Cost Range: 5 MCHF ⇔ 10 MCHF

Planning: MS: Q4 2024

IT: Q3 2025

Contact: theodoros.aivaliotis@cern.ch





SRF/SA18 Cleanrooms construction

Description & Specific Condition:

Design, supply, construction, test and commissioning of all the cleanrooms and their associated HVAC systems in the new building SA18 at Point 1.8 of the LHC.

Key conditions:

- Experience in the construction of laminar flow ISO Class 4 cleanrooms and mixed flow ISO 8 cleanrooms of similar size and complexity.
- Experience in the execution of similar projects in accordance with the European and French regulations.

Start of the Contract: Q3 2026

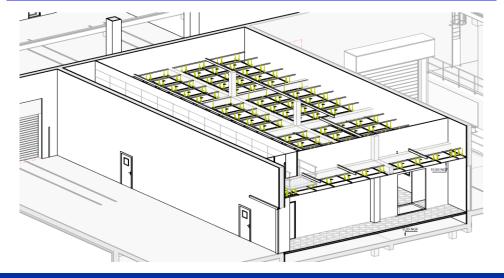
Procurement Code: 01 03 00 00

Cost Range: 6 MCHF ⇔ 12 MCHF

Planning: MS: Q4 2024

IT: Q3 2025

Contact: theodoros.aivaliotis@cern.ch





SRF/SA18 Natural refrigerant heat pumps/chillers

Description & Specific Condition:

Supply of the Air Source Heat Pumps (ASHPs), which will generate heating and cooling water for the new building SA18 at Point 1.8 of the LHC.

Key conditions:

- Experience in the supply of units of similar cooling and heating capacities.
- Utilisation of a natural refrigerant with very low GWP.
- Energy performance validated in accordance to EN14511.

Start of the Contract: Q4 2026

Procurement Code: 01 03 01 03

Cost Range: 400k - 1.5M CHF

Planning: MS: Q3 2025

IT: Q1 2026

Contact: theodoros.aivaliotis@cern.ch





Water treatment plant in point 1

Description & Specific Condition:

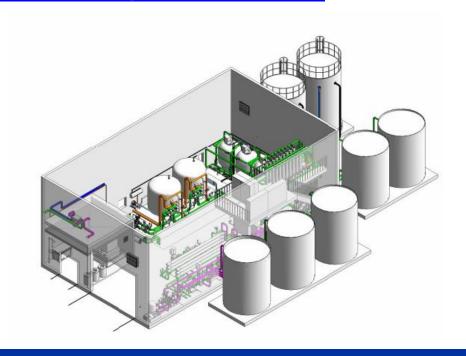
Design, supply, installation, test and commissioning of a water treatment plant including :

- Filtration: multimedia filters, ultrafiltration.
- Softeners.
- Reverse osmosis.
- Tanks and piping.
- Power and control cubicles.

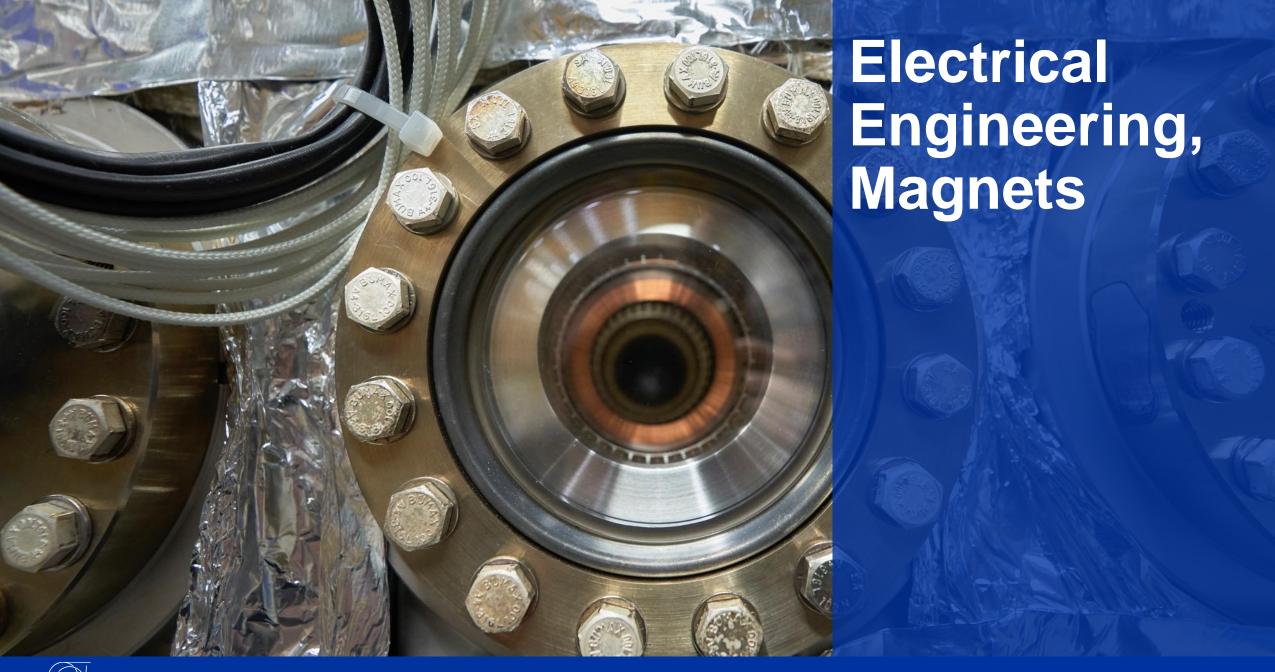
Cost Range: 750 kCHF ⇔ 5 MCHF

Planning: MS: Q1 2027 IT: Q3 2027

Contact: serge.deleval@cern.ch









UPS 20-200 kVA (MS-4959)

Description & Specific Condition:

Supply of modular UPS in the range of 20 - 200 kVA, incl. design and supply

5 years Blanket contract

25 Units in 2025

15 additional Units in the next years of the Contract

Procurement Code: 02 30 40 00

Cost Range : 400k – 1.5MCHF

Planning: MS: Q2 2024, IT: Q4 2024

Contact: Joel.Lahaye@cern.ch





400 kV circuit breakers and 66 kV disconnector switches (MS-5038/EN)

Description & Specific Condition:

Supply of 5 Circuit Breakers 400 kV and 18 disconnector switches 66 kV.

One or two Supply Contracts.

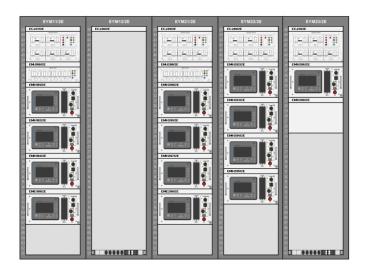
Firms must have a proven experience and competence in the design and manufacturing of high voltage equipment for at least 10 years.

Procurement Code: 02 02 01 00

Cost Range: 400k - 1.5M CHF

Planning: MS: Q4 2024 IT: Q1 2025

Contact: George.Podoleanu@cern.ch





Crates for Relays (MS-5034/EN)

Description & Specific Condition:

Supply of numerical protection relay crates for housing protection of 275 relays in 19" racks.

Supply Contract.

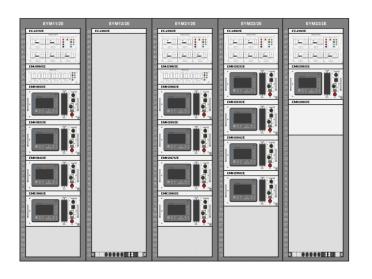
Firms must have in-house facilities for the production and assembly of the specified protection relay crates and hold ISO9001-2000 quality certification or equivalent.

Procurement Code: 02 70 01 00

Cost Range: 400k - 1.5M CHF

Planning: MS: Q4 2024 IT: Q1 2025

Contact: Joni.Leppilhati@cern.ch





Power Modules 14 kA (4948/SY)

Description & Specific Condition:

Production and testing of 216 power modules (Input and Output), parts of a [14kA; 08V] converter for HL-LHC project.

Supply Contract

Build-to-print

Procurement Code: 02 10 05 00

Cost Range: 750 kCHF ⇔ 5 MCHF

Planning: IT: Q3/4 2024

Contact: Yves.Thurel@cern.ch







Power Magnetics for 14 kA Power Modules (MS-4982/SY)

Description & Specific Condition:

580 complete units of power magnetics; each unit composed by a Transformer and an Inductor.

Supply Contract.

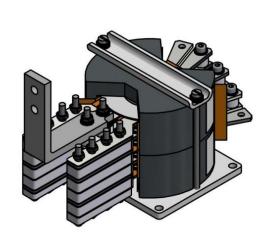
Firms must have in-house facilities for the assembly and test of the specified power magnetics and hold ISO9001-2000 quality certification or equivalent.

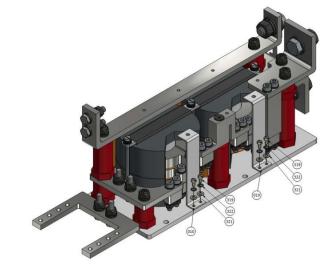
Procurement Code: 02 10 10 00

Cost Range: 200 kCHF ⇔ 750 kCHF

Planning: MS: Q2 2024 IT: Q3 2024

Contact: Yves.Thurel@cern.ch







Three Diesel Generators (MS-4974/EN)

Procurement Code: 02 70 01 00

Cost Range: 750 kCHF ⇔ 5 MCHF

Planning: MS: Published / IT: Q4 2024

Pre-engineering (done by CERN) during 2024 Design + engineering during Q1 and Q2 2025

Start of commissioning Q4 2025

Location on the CERN site: France

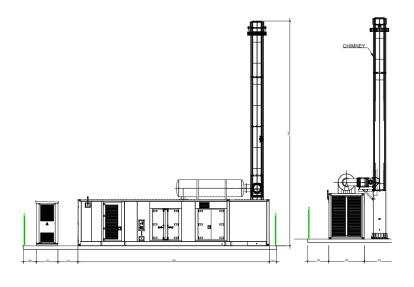
Description & Specific Condition:

Supply, installation and maintenance of three diesel generators (including all civil engineering work):

- One unit 400 V 800 kVA ESP (replacement of an existing generator);
- Two units of 400 V 2MVA ESP (including chimney and diesel buried tank).

Contact: Pablo.Valdes@cern.ch







60-wire planetary cabling machine (MS-4905/TE)

Procurement Code: 02 25 05 03

Cost Range: ≤ 750 k CHF

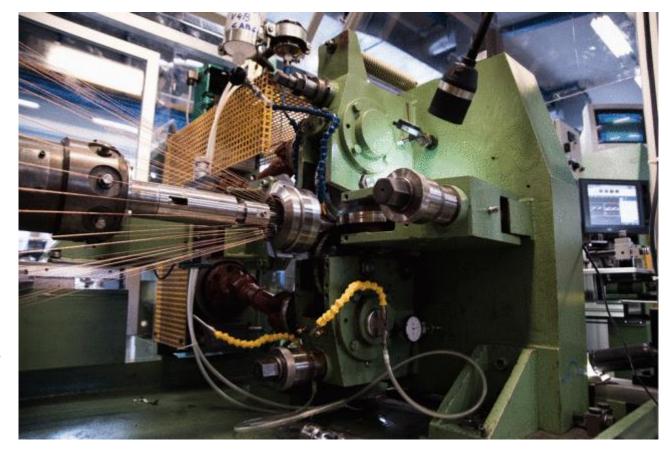
Planning: MS: published

IT: Q4 2024

Description & Specific Condition:

Planetary cabling machine for manufacture of cables of up to 60 superconducting or copper wires and round cables

Contact: Thierry.Boutboul@cern.ch





Fibre glass cable insulation (MS-4968/TE)

Description & Specific Condition:

3-year blanket purchase contract, estimated 57 km of cables to be insulated

Tailor-made insulation in fibre glass for magnet cables, for HFM programme

Production line must be in a separate, dedicated space to avoid contamination

Key conditions:

- Clean room (grey, ISO8)
- Proven experience with fibre (glass) braiding
- Proven experience with braiding around large rectangular cable
- Proven experience with horizontal braiding systems

Procurement code: 02 25 04 03

Cost Range: 750 k CHF ⇔ 5 M CHF

Planning: MS: Q2-2024

IT: Q4-2024

Contact: Francois-Olivier.Pincot@cern.ch





Step-up transformers for RF LHC (MS-4979/SY)

Description & Specific Condition:

Supply of five Oil tanks units containing two identical transformers rated 2MVA, 28kV/1kV each, insulated to ground at 60kV.

Each unit of this supply consist of two immersed oil transformers in one tank for outdoor use.

Procurement Code: 02 01 05 00

Cost Range: 200 kCHF ⇔ 750 kCHF

Planning: MS: Q2 2024 IT: Q4 2024

Contact: davide.aguglia@cern.ch





Normal-conducting Electromagnets, Yokes, and Coils (MS-4994/TE)

Description & Specific Condition:

Framework Market Survey to qualify companies able to produce:

- Whole Magnets:
- Laminated (Air/Water Cooled) from 1 to 20 tons
- Solid (Air/Water Cooled) from 1 to 20 tons
- Yokes:
- Laminated (Air/Water Cooled) from 1 to 20 tons
- Solid (Air/Water Cooled) from 1 to 20 tons
- Coils:
- Length: Up to 1000 mm
- Length: From 1000 to 5000 mm
- Length: Above 5000 mm

Procurement Code: 02 25 02 00

Cost Range: 750 kCHF ⇔ 5 MCHF

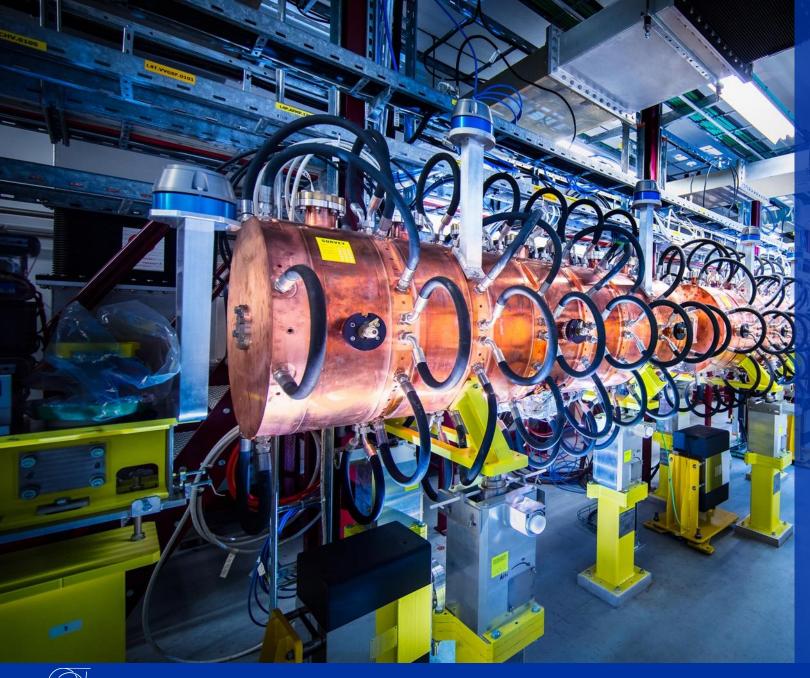
Planning: MS: Q3 2024

IT: Q4 2024

Contact: antony.newborough@cern.ch







Electronics, Radiofrequency



Custom designed PCIe based fibre optics I/O cards

Procurement Code: 03 04 09 00 (PCI, PCIe modular electronic boards)

Cost Range: 400 K - 1.5 M CHF

Planning: MS: Q4 2024

IT: Q1 2025

Scope:

Assembly and testing of approx. 800 PCBs

- Versal Prime VP1552 FPGA
- PCIe Gen5 x16
- Up to 52 optical links, link speed up to 25 Gb/s
- Overall PCB dimensions: 311.99 x 106.65 m
- 24 layers and a thickness of (3.00 ± 0.28) mm
- PCB material is EM980K

Duration: Production over 12 months

<u>Eligible Firm Profile:</u> Interested firms shall have proven experience and competence in assembly and test of PCBs of the complexity required.



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Contact: Carlo.Alberto.Gottardo@cern.ch



Supply of Micro-D Connectors and Cables

Procurement Code: 02 05 03 00 (Multiconductor cables)

03 02 04 03 (Rectangular connectors)

Cost Range: 400 K - 1.5 M CHF

Planning: MS: Q4 2024

IT: Q1 2025

Scope:

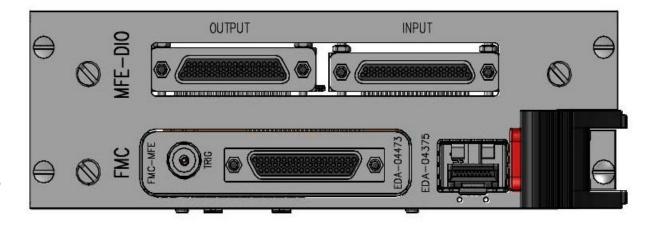
Procurement of high-reliability, MIL-DTL-83513 standard Micro-D connectors and cables.

400 sets of three types (51-way plug, 51-way socket, 37-way plug) PCB connectors and

400 sets of three types of corresponding cables.

Duration: Production over 12 months

<u>Eligible Firm Profile:</u> Interested firms shall have experience in manufacturing Micro-D connectors and low-smoke zero halogen cables.



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Contact: Erik.van.der.Bij@cern.ch



HL-LHC Crab cavities RF Circulators & Loads (MS-5030/SY/HL/LHC)

Description & Specific Condition :

Supply of 18 x circulators for the HL-LHC Crab cavities.

Key conditions:

- Design & manufacturing expertise : CERN will provide a functional specification and the Contractor shall design and manufacture accordingly (Detailed Design File to be approved by CERN)
- Capacity to manufacture 18 units in approximately in less than 3 years
- Proven experience with circulators and loads for High Power RF Systems

Start of the Contract: Q1 2025

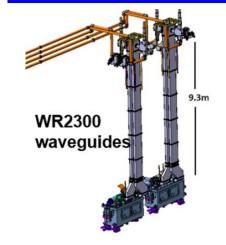
Procurement Code: 03 06 01 00

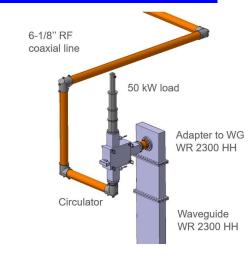
Cost Range: 750 kCHF ⇔ 5 MCHF

Planning: MS: Q3/4 2024

IT: Q4 2024

Contact: eric.montesinos@cern.ch







HL-LHC Crab cavities HPRF stations (MS-5024/SY/HL/LHC)

Description & Specific Condition:

Supply of 18 HPRF stations (High Power Radio Frequency station) powering IOTs for the HL-LHC Crab cavities.

Key conditions:

- Design and Manufacturing expertise in HPRF equipment
- Capacity to produce in the systems in the required timeframe.

Start of the Contract: Q1 2025

Procurement Code: 03 06 01 00

Cost Range: 5 MCHF ⇔ 10 MCHF

Planning: MS: Q3/4 2024

IT: Q4 2024

Contact: eric.montesinos@cern.ch





HL-LHC HPRF Waveguides (MS-5031/SY/HL/LHC)

Description & Specific Condition:

Supply of 18 Waveguides + spares for the HL-LHC Crab cavities

Key conditions:

- Design and Manufacturing expertise in HPRF equipment
- Capacity to produce in the systems in the required timeframe.

Start of the Contract: Q1 2025

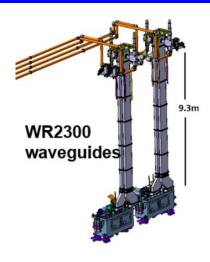
Procurement Code: 03 02 12 00

Cost Range: 750 kCHF ⇔ 5 MCHF

Planning: MS: Q3/4 2024

IT: Q4 2024

Contact: eric.montesinos@cern.ch





Diode Bridge for RF LHC

Description & Specific Condition:

Supply of 5 air insulated and high-voltage diode bridge rectifiers assemblies.

Each assembly should be composed of submodules to compose a full Diode bridge rectifier 60kV- 40Adc. **Procurement Code:** 03 01 02 09

Cost Range: 200 kCHF ⇔ 750 kCHF

Planning: MS: Q2 2024 IT: Q4 2024

Contact: davide.aguglia@cern.ch



Filter Choke for RF LHC

Description & Specific Condition:

5 units of Oil-immersed High-Voltage filter choke for twelve-pulse rectifiers application.

The supply includes the production and testing of five oil tanks units containing one Filter Choke (composed of at least 2 coils), rated 2.4MW, 60kV each.

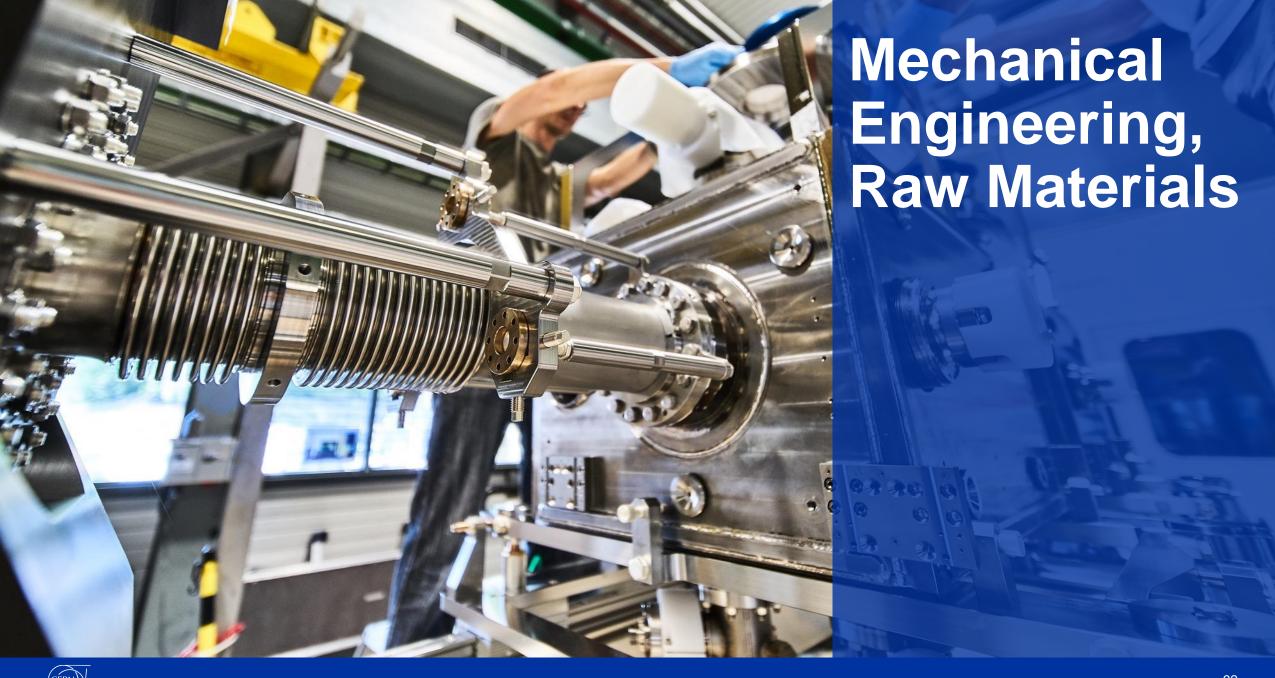
Procurement Code: 03 02 03 03

Cost Range: 200 kCHF ⇔ 750 kCHF

Planning: MS: Q2 2024 IT: Q4 2024

Contact: davide.aguglia@cern.ch







Motoreductors (DO-34377/BE)

Procurement Code:

05 01 07 00

Cost Range: 200-400 k CHF

Planning: DO: Q3/4 2024

Description & Specific Condition:

Performance specification: 207 **compact**, **high-torque** and **backlash-free motoreductors**, which shall be **radiation resistant**

Firms shall be **experienced** in producing motoreductors of the characteristics defined above.

Contact: Mateusz.Sosin@cern.ch



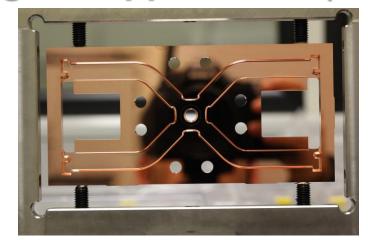
Ultra precision machining of copper disks (DO-34382/SY/CLIC)

Procurement Code:

05 04 02 00

Cost Range: 200-400 k CHF

Planning: DO: Q4 2024

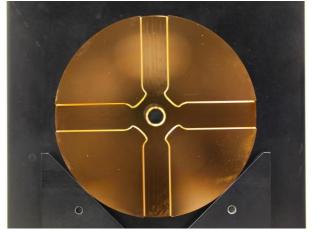




Description & Specific Condition:

Build-to-print specification: ultra precision machining of copper disks

Firms shall have **CNC** and **CMM**, **experience** in machining similar tolerances and shall succeed in providing a prototype of the disc.





Contact: pedro.morales.sanchez@cern.ch



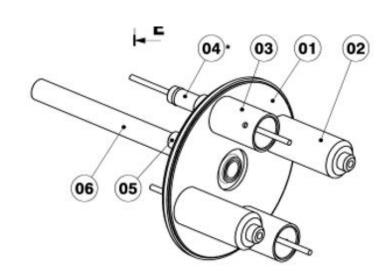
Precision end plates for UHV application (DO-34448/SY/HL-LHC)

Procurement Code:

06 01 06 06

Cost Range: 200-400 k CHF

Planning: DO: Q3 2024

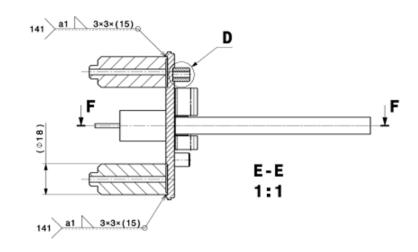


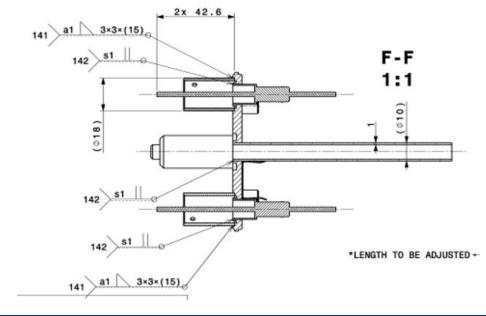
Description & Specific Condition:

Build-to-print specification: precision end plates for UHV application. Materials: stainless-steel, copper and ceramics. Activities involved: machining, cleaning, welding, metrology and leak testing.

Firms shall have **experience** in the activities mentioned above for UHV applications. Firms must provide references.

Contact: Gerhard.Schneider@cern.ch







Tungsten Half Shells of Tungsten alloy (DO-34467/SY/HL-LHC)

Procurement Code:

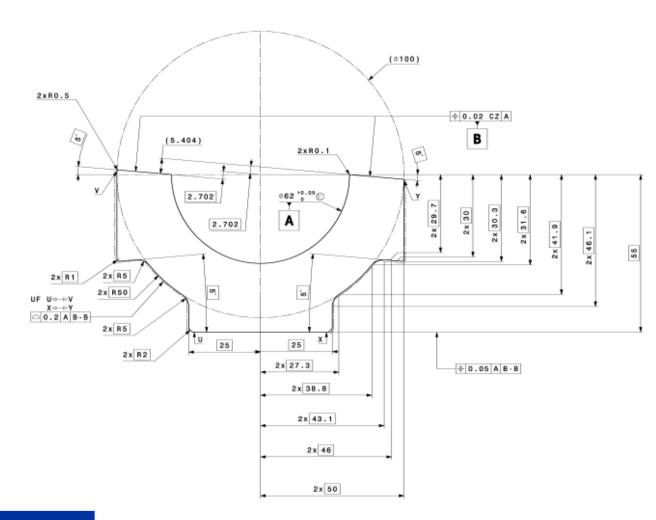
05 01 03 07 - Refractory metals (Nb, Mo, W, Ta...) and alloys

Cost Range: 200-400 k CHF

Planning: DO: Q4 2024

Description & Specific Condition:

Tungsten alloy (W95NiCu) Half Shells, according to the material, dimensions, tolerances, surface treatments and norms and standards defined in the Technical Specification.



Contact: edouard.grenier-boley@cern.ch



Ti6Al4V forged blanks (MS-5036/SY/HL-LHC)

Procurement Code:

05 01 02 06 - Titanium, titanium alloys

Cost Range: 400k-1.5M CHF

Planning: MS: Q4 2024

IT: Q1 2025

Description & Specific Condition:

44 seamless **Ti Gr 5 forged hollow blanks** for the vessels of the HL-LHC dumps.

Main requirements:

- Inner diameter 698.5 mm (cylindricity tolerance of 0.1 mm).
- Wall thickness 12 mm.
- Length 750 mm

Contact: nicola.solieri@cern.ch







Stainless-steel forged blanks and rings EN 1.4429 AISI 316LN for Ultra-High Vacuum applications (MS-5016/SCE)

Procurement Code: 05 01 03 02 (Stainless Steel)

Cost Range: 5M – 10M CHF

Planning: MS: Q4 2024

IT: Q1 2025

Contract start: 1 July 2025

Scope:

- Supply of 80T stainless steel forged blanks;
- EN 1.4429 AISI 316LN (Electroslag Remelting ESR)

Duration: 5 years

<u>Eligible Firm Profile:</u> Interested firms shall have proven experience and competence in metallurgy, manufacturing, forging and testing of the above-mentioned material.



Contact: Leila.akhouay@cern.ch



Supply of Corrugated Welded Stainless-Steel Pipes for the Einstein Telescope Pilot Sector

Description & Specific Condition:

Two prototypes with an inner diameter of 1000 mm and a length of at least two metres, featuring corrugation as per the approved final design and fully representative of the foreseen manufacturing process for the series pipes, are to be delivered to CERN prior to the final approval for the manufacturing of seven pipes. The contractor shall select the most suitable techniques to perform welding, forming and corrugation of the strip to achieve the final design.

Composition (wt. %) of the stainless steel according to EN 10028-7:

| | С | Mn | Si | Р | S | Cr | Ni | Nb | Ti |
|-----------|--------|--------|--------|--------|---------|---------------|---------|--------|---------------|
| AISI 441 | ≤ 0.03 | ≤ 1.00 | ≤ 1.00 | ≤ 0.04 | ≤ 0.015 | 17.5- 18.5 | - | ≤ 1.00 | 0.10– 0.60 |
| AISI 304L | ≤0.03 | ≤2.0 | ≤1.0 | ≤0.03 | ≤0.015 | 17.0- 20.0 | 10-12.5 | - | - |

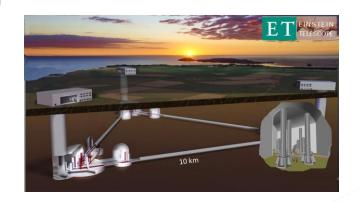
Mechanical properties of the stainless steel:

| | Yield Strength Rp0.2 (MPa) | Tensile strength Rm (MPa) | Elongation at break A5 (%) |
|-----------|-------------------------------|---------------------------------|----------------------------------|
| AISI 441 | ~ 320 | ~ 480 | ~ 30 |
| AISI 304L | ~220 | ~520 | ~45 |

Cost Range: < 750k CHF

Planning: MS: Q3/4 2024 IT: Q4 2024

Contact: cedric.garion@cern.ch







Sensors, Detection Alarms, Optics, Photonics



OTDR-DTS Optical Interrogator Units

Description & Specific Condition:

Optical Time Domain Reflectometer Distributed Temperature Sensors

- Single-mode OTDR (C+L telecom bands).
- Capability to do Rayleigh OTDR traces (needed for the radiation dose measurement)
- Capability to do Raman OTDR traces (needed for the temperature measurement)
- Dual wavelength (to correct radiation effects on the temperature traces)
- High repeatability of Rayleigh OTDR traces

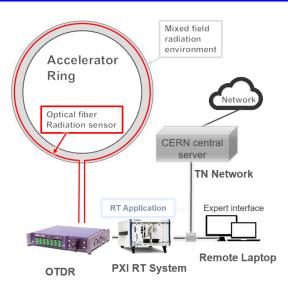
11-15 units needed during 2025-26

Procurement Code: 08 04 02 00

Cost Range: < 750 kCHF

Planning: MS: Q3/4 2024 IT: Q4 2024

Contact: Diego.di.Francesca@cern.ch



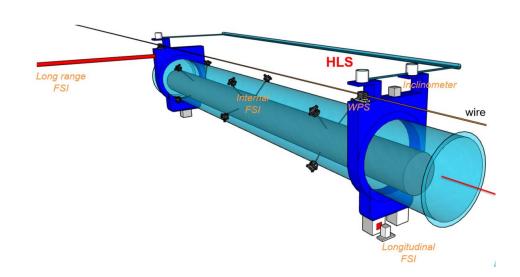


Sensors for alignment

Description & Specific Condition:

Alignment system includes the following sensors:

- Wire Positioning Sensors (WPS)
- Hydrostatic Levelling Sensors (HLS)



Cost Range: ≤ 750 k CHF

Planning: WPS: MS Q3/4 2024, IT Q4 2024

HLS: DO Q3/4 2024

Contact: Helene.Mainaud.Durand@cern.ch

Capacitive WPS sensor

- X-Y measurement w.r.t. stretched conductive wire
- Accuracy < 5μm, Resolution < 1μm
- Limited cable length (max. 30 .. 50 m)
- Conditioning electronics need to be RAD-TOL





Voice Alarm and Evacuation System

Description & Specific Condition:

8 years blanket purchase contract

Design, supply and installation, test and commissioning of the Voice Alarm & Evacuation systems

New LHC voice systems to be installed and commissioned during LS3, and existing acoustic alarms systems to be renovated

Smaller projects (non-LHC) of the same nature will be included in the contract at an estimated rate of 3 per year

Any component to be installed in the LHC shall satisfy the constraints of radiation and helium presence.

Procurement Code: 10 07 01 03

Cost Range: 750 kCHF ⇔ 5 MCHF

Planning: MS: Q3/4 2024 IT: Q4 2024

Contact: eva.sanchez-corral.mena@cern.ch











Information Technology



Elaboration of Technical Specs For Human Capital Management (HCM) Suite Tendering

Procurement Code: 04900200 (Software Development Consultants)

Cost Range: 100k - 400K CHF

Planning: DO: Q4 2024

Contract start: 1 January 2025

Scope:

 In collaboration with business and computing stakeholders, elaboration of technical specifications and qualification criteria for the tendering procedures related to a new HCM Suite solution, its implementation and the implementation QA services

Duration: 6 months

Eligible Firm Profile:

 Interested firms shall have proven competence and experience in accompanying international governmental organisations (similar to CERN) during the selection and implementation of HCM/ERP solutions.





Human Capital Management (HCM) Suite

Procurement Code: 04050700 (Application Packages)

Cost Range: 400k – 5M CHF

Planning: MS: Q4 2004

IT: Q3 2025

Contract start: 1 January 2026

Scope:

- Provision of a HCM Suite (HR Information System) incl. at least the domains Core HR, Recruitment, Learning Management, Payroll and optionally Enterprise Performance Management.
- Future extensibility to cover domains such as Finance, Procurement and Supply Chanin Management is desired.

Duration: min. 5 years

Eligible Firm Profile:

 Interested firms shall be recognised for their expertise in providing full-scale HCM solutions. They shall have experience in providing to and supporting such solutions for international governmental organisations.





Human Capital Management (HCM) Implementation Services

<u>Procurement Code:</u> 04900200 (Software Development Consultants)

Cost Range: 400k - 5M CHF

Planning: MS: Q4 2004

IT: Q4 2025

Contract start: 1 May 2026

Scope:

 Provision of agile HCM Suite implementation services (tool vendor to be determined in preceding tendering procedure).

Duration: 3 years

Eligible Firm Profile:

- Interested firms shall have proven competence and experience in implementing HCM/ERP solutions in replacement of an existing system.
- They shall be certified implementation partners for the HCM solutions they wish to be considered for.





Human Capital Management (HCM) Implementation Quality Assurance Services

Procurement Code: 04900200 (Software Development Consultants)

Cost Range: 100k - 400K CHF

Planning: MS: Q4 2004

IT: Q4 2025

Contract start: 1 May 2026

Scope:

 Provision of Quality Assurance services during the HCM Suite implementation period. As part of the HCM implementation Steering Committee act as intermediate between CERN's implementation partner and CERN.

Duration: 3 years

Eligible Firm Profile:

- Interested firms shall have proven competence and experience in providing quality assurance for HCM/ERP implementation projects.
- Firm has to be fully independent from the chosen HCM implementation provider.





CERN Fire & Rescue Service Operational Management Software

Description & Specific Condition:

Five-year contract for the supply of a software based operational management system for CERN Fire and Rescue Service.

- Software must cover the entire workflow and lifecycle of FRS operations including:
 - Receiving alerts
 - Response management
 - Action traceability
 - Archiving, statistics and reporting
- The software must be able to integrate/interact with other software already used at CERN such as CSAM, GIS portal, etc.
- Only firms with previous experience in developing and deploying operational management software for fire brigades/emergency services will be considered.

<u>Cost Range</u>: 400k – 1.5MCHF

Planning: MS: Q3/4 2024 IT: Q4 2024

Contact: Jean.Audrain@cern.ch





Software solution to perform CERN car sharing service and CERN car fleet management

Description & Specific Condition :

3 years blanket purchase contract.

Design, supply and installation, test and commissioning of the software managing the car sharing and the fleet management.

New software to be installed and commissioned end of 2024beginning of 2025.

Fleet management will concern +/- 500 vehicles in 2028.

Car sharing will concern +/- 300 vehicles in 2028.

Procurement Code: 11 10 02 03

Cost Range: 750 kCHF ⇔ 5 MCHF

Planning: MS: closing soon IT: Q3 2024

Contact: Stephanie.Blanchard@cern.ch











Construction of new Building 777 (MS-4977/SCE)

Description & Specific Condition:

General contractor to construct new Building 777 on CERN's Prévessin site in France. Key characteristics include:

- Mass timber structural system
- Highly-performing mechanical, electrical, plumbing (MEP) and façade system to achieve recognised sustainability accreditation.







Procurement code: 01 02 01 00/ 01/ 02

Cost Range: > 10M CHF

Planning: MS closing soon / IT Q3 2024

Contact: Pieter.mattelaer@cern.ch



Insurance brokerage services (MS-4864/FAP)

Procurement Code: 14 01 02 00 (Transport and Property Insurance)

Cost Range: 400k - 1.5M CHF

Planning: MS: Q1 2025

IT: Q2 2024

Contract start: 1 January 2026

Scope:

Provision of insurance broking services;

• Support, advice and monitoring of CERNs insurance contract portfolio (around twenty contracts).

<u>Duration:</u> 5 years (+ optional 2-y extension)

<u>Eligible Firm Profile:</u> Interested firms shall have proven competence and experience in providing insurance broking services for large science infrastructures and international organizations



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Contact: Carmelo.Saitta@cern.ch



Socio-economic impact assessment of CERN activities

Procurement Code: 12 90 00 00 (Management and

communication consultants)

Cost Range: 400 K – 1.5 M CHF

Planning: MS: Q4 2024

IT: Q4 2024

Contract start: 1 January 2025

Scope:

Literature review, methodology and content proposal

Socio-economic impact assessments

Case studies

Production of a CERN Impact Study Report

Duration: 1 year (+ optional to renew)

<u>Eligible Firm Profile:</u> Interested firms shall have proven experience and competence in complex multi-dimensional studies on the socio-economic impact of big science and/or fundamental research.



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Contact: Manuela.Cirilli@cern.ch



Maintenance services for high voltage (HTB) power electrical equipment at CERN (MS-4819/EN)

Procurement Code: 02010100, 13030200, 13030600

(Electrical Services)

Cost Range: 1.5 – 5 M CHF

Planning: MS: published

IT: Q4 2024

Contract start: 1 July 2025

Scope:

- Preventive and corrective maintenance for high voltage (HTB) power electrical equipment rated 400 kV and 66 kV at CERN.
- The equipment to be maintained will include power transformers, circuit breakers, switches, measurements instruments and busbar systems.

<u>Duration:</u> 5 years (+ optional 2-y extension)

<u>Eligible Firm Profile:</u> Interested firms shall have proven experience and competence in maintenance of similar high voltage (HTB) power electrical equipment rated 400 kV and 66 kV.



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Contact: Giuseppe.Cappai@cern.ch



Multidirectional Scaffolding Services at CERN (MS-4803/BE)

Procurement Code: 01020500 (Scaffolding)

Cost Range: 1.5 – 5 M CHF

Planning: MS: closing soon

IT: Q4 2024

Contract start: 1 May 2025

Scope: Multidirectional scaffolding services, including:

assembling

shoring

shrink wrap encapsulation

modification

rental

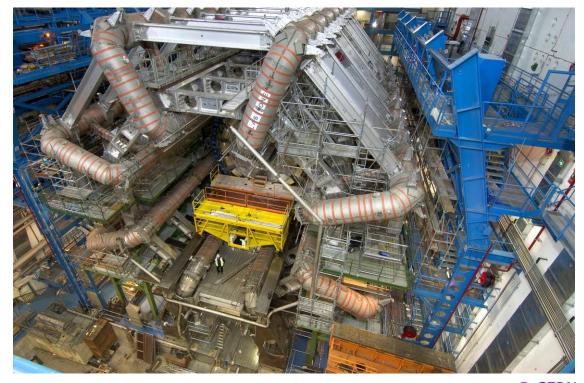
dismantling

Transport

• ...

Duration: 3 years (+ 2 optional 2-y extensions)

<u>Eligible Firm Profile:</u> Interested firms shall have proven experience and competence in multidirectional scaffolding work.



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Contact: Frederic.Chapron@cern.ch



Polluant decontamination services at CERN (MS-4969/BE)

Procurement Code: 01020901

Cost Range: 1.5 – 5 M CHF

Planning: MS: closing soon

IT: Q4 2024

Contract start: 1 April 2025

Scope: Polluant decontamination services both in FR and CH, including:

Asbestos (mainly)

Lead

PCB

HPA

HBCD

Duration: 3 years (+ 2 optional 2-y extensions)

Eligible Firm Profile: Interested firms shall have proven experience and competence in the field, and be SUVA accredited for the performance of the Contract



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Contact: Denis.Pazem@cern.ch



Operation, Maintenance and Works for HVAC installations in CERN's tertiary buildings (MS-4989/SCE)

Procurement Code:

13 02 03 00 (Maintenance / operation of heating systems)

13 02 05 00 (CV maintenance)

Cost Range: > 10M CHF

Planning: MS closing soon / IT Oct 2024

Contract start: 1 June 2025

Scope:

 Operation, maintenance (preventive, corrective, stand-by service) and works (small and large) for HVAC installations of CERN'S tertiary buildings (e.g.: boiler rooms, district heating networks, hotels, restaurants)

Duration: 3 years (+ optional 2 x 2-y extension)

<u>Eligible Firm Profile:</u> Interested firms shall have proven experience and competence in operation, maintenance and works related to HVAC and sanitary installations



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Operation, Maintenance and Works for HVAC installations in CERN's industrial buildings (MS-5035/EN)

Procurement Code: 13 02 05 00 (CV maintenance)

Cost Range: > 10M CHF

Planning: MS: published

IT: October 2024

Contract start: 1 July 2025

Scope:

- Maintenance and operation of more than 2000 cooling and ventilation industrial installations of various type, age, and complexity in the accelerators complex and experimental areas at CERN
- Modification and improvement works on existing CV installations
- Spare parts management

<u>Duration:</u> 5 years (+ optional 2-y extension)

<u>Eligible Firm Profile:</u> Interested firms shall have proven experience and competence in maintenance and operation of large industrial CV systems.



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Maintenance of CERN's green spaces

Procurement Code: 13 01 02 00 (Green spaces)

Cost Range: 1.5M - 5M CHF

Planning: MS: Q1 2025

IT: Q2 2025

Contract start: 1 January 2026

Scope: maintenance of all the green spaces with the CERN domain, including lawn, trees, terraces and pedestrian paths, roads, and parking lots.

Duration: 3 years (+ optional 2 x 2-y extensions)

<u>Eligible Firm Profile:</u> Interested firms shall have proven experience and competence in maintenance of green spaces



Rare wild Orchids at CERN

Meyrin © CERN

Contact: Mathieu.fontaine@cern.ch



Electrical installation services at CERN

Procurement Code: 13 03 06 00 (Electrical installation works)

Cost Range: > 10M CHF

Planning: MS: Q4 2024

IT: Q2 2025

Contract start: 1 Jan 2026

Scope:

Modifications to the electrical power distribution network

- Cabling work
- Minor electrical works
- IT cabling
- Work supervision

• ..

<u>Duration:</u> 5 years (+ optional 2-y extension)

<u>Eligible Firm Profile:</u> Interested firms shall have proven experience and competence in large electrical installation service contracts.



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Thank you

