Doing Business with CERN
UK@CERN

Adam Horridge

Wednesday 30th November 2022
AGENDA

- Introduction
- Statistics and What We Buy
- Procurement @ CERN - The Rules
- Impact of Doing Business with CERN
- Procurement Website & Contacts
INTRODUCTION
CERN - the world’s biggest laboratory for particle physics.

International Organization established on 1 July 1953 - “Science for Peace”.

Immunity of jurisdiction and execution.
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 23 Member States

23 Member States
3 Associate Member States in the pre-stage to membership
7 Associate Member States
6 Observers

Yearly budget ~ 1347 MCHF

Geographical & cultural diversity
110 nationalities, from 77 countries

~ 2676 Staff members
~ 2000 contractors’ employees
~ 13000 physicists / users
STATISTICS
# Yearly Budget (contributions 2022)

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of Total</th>
<th>Amount (CHF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>20.32%</td>
<td>245 017 700</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>14.20%</td>
<td>171 219 200</td>
</tr>
<tr>
<td>France</td>
<td>13.42%</td>
<td>161 894 900</td>
</tr>
<tr>
<td>Italy</td>
<td>10.10%</td>
<td>121 766 050</td>
</tr>
<tr>
<td>Spain</td>
<td>7.25%</td>
<td>87 403 500</td>
</tr>
<tr>
<td>Netherlands</td>
<td>4.63%</td>
<td>55 847 250</td>
</tr>
<tr>
<td>Switzerland</td>
<td>3.84%</td>
<td>46 281 900</td>
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<tr>
<td>Poland</td>
<td>2.88%</td>
<td>34 787 950</td>
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<tr>
<td>Belgium</td>
<td>2.71%</td>
<td>32 668 100</td>
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<tr>
<td>Sweden</td>
<td>2.49%</td>
<td>30 045 050</td>
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<tr>
<td>Norway</td>
<td>2.21%</td>
<td>26 636 300</td>
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<tr>
<td>Austria</td>
<td>2.15%</td>
<td>25 937 750</td>
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<tr>
<td>Israel</td>
<td>1.95%</td>
<td>23 501 450</td>
</tr>
<tr>
<td>Denmark</td>
<td>1.77%</td>
<td>21 381 600</td>
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<tr>
<td>India*</td>
<td>1.40%</td>
<td>16 838 200</td>
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<tr>
<td>Finland</td>
<td>1.50%</td>
<td>15 708 050</td>
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<tr>
<td>Romania</td>
<td>1.20%</td>
<td>14 424 700</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>1.10%</td>
<td>13 220 000</td>
</tr>
<tr>
<td>Portugal</td>
<td>1.09%</td>
<td>13 148 350</td>
</tr>
<tr>
<td>Greece</td>
<td>0.99%</td>
<td>11 894 950</td>
</tr>
<tr>
<td>Hungary</td>
<td>0.71%</td>
<td>8 580 300</td>
</tr>
<tr>
<td>Slovakia</td>
<td>0.51%</td>
<td>6 151 800</td>
</tr>
<tr>
<td>Turkey*</td>
<td>0.41%</td>
<td>4 961 450</td>
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<tr>
<td>Bulgaria</td>
<td>0.33%</td>
<td>3 977 800</td>
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<tr>
<td>Serbia</td>
<td>0.25%</td>
<td>3 002 950</td>
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<tr>
<td>Pakistan*</td>
<td>0.15%</td>
<td>1 843 950</td>
</tr>
<tr>
<td>Slovenia**</td>
<td>0.12%</td>
<td>1 484 800</td>
</tr>
<tr>
<td>Estonia**</td>
<td>0.11%</td>
<td>1 310 850</td>
</tr>
<tr>
<td>Cyprus**</td>
<td>0.09%</td>
<td>1 025 350</td>
</tr>
<tr>
<td>Latvia*</td>
<td>0.09%</td>
<td>1 024 850</td>
</tr>
<tr>
<td>Croatia*</td>
<td>0.08%</td>
<td>1 000 000</td>
</tr>
<tr>
<td>Lithuania*</td>
<td>0.08%</td>
<td>1 000 000</td>
</tr>
<tr>
<td>Ukraine*</td>
<td>0.08%</td>
<td>1 000 000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>1 205 987 050</strong></td>
</tr>
</tbody>
</table>
Industrial Return – Supply Contracts

* provisional
Industrial Return – Service Contracts

* provisional
What do we buy?

- Civil engineering:
  - Construction
  - Renovation of buildings
  - Metallic structures
  - Earthworks
  - Roads

- Cooling and ventilation equipment
What do we buy?

• Electrical engineering and magnets
  • Transformers
  • Switchboards and switchgear
  • Cables
  • Automation
  • Power supplies
  • Magnets
What do we buy:

- Information Technology
- Computing systems
- Servers
- Software
- Network equipment
- Personal computer equipment
What do we buy?

- 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
What do we buy?

- **Electronics and radiofrequency:**
  - Electronic components (active, passive)
  - PCBs and assembled boards
  - LV and HV power supplies
  - Radiofrequency plants
  - Amplifiers
What do we buy?

- 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

Hi-Lumi will provide greater precision and discovery potential

Hi-Lumi will start operating in 2026, and run until 2035

CERN is already looking beyond 2035, with several projects in R&D or study stages
Two biggest projects for future of particle physics

Compact Linear Collider (CLIC)
- Linear e⁺e⁻ collider √s up to 3 TeV

Future Circular Collider (FCC)
- New technology magnets → 100 TeV pp collisions in 100km ring
- e⁺e⁻ collider (FCC-ee) as 1st step?
Supplies (229MCHF spent in 2021 – CERN budget only)

- Civil engineering, buildings: 35%
- IT: 16%
- Mechanical engineering and raw materials: 9%
- Electrical engineering and magnets: 7%
- Electronics and RF: 8%
- Vacuum and cryogenics: 4%
- Transport, handling and vehicles: 4%
- Office supply, furniture: 5%
- Miscellaneous: 6%
- HSE equipment: 2%
- Optics and photonics: 1%
- Particle and photon detectors: 0%
- Gases, chemicals, ..: 3%
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
PROCUREMENT @CERN
the rules
The Procurement Service

Mission

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

- Meeting the specified and contractual technical, delivery and performance requirements
- At the lowest possible overall cost
- 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

3. Objectivity and equal treatment: tendering packages are objective and impartial
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 for supplies (and services, exceptionally) based on: *Lowest compliant bid*
Principles of the Procurement Rules (4/4)

Award for industrial services based on:
Best Value For Money
Tender Processes at CERN

“Price enquiry” (Demande d’Offre - DO) – <200,000 CHF

• Submission deadline: 4 weeks from date of dispatch;
• All price enquiries above 50’000 CHF are also sent to the Industrial Liaison Officers (ILOs) for information;

Markey Survey & Invitation to Tender – >200,000 CHF

• All requirements published on CERN’s webpage
• Market Survey is CERN’s pre-qualification stage
• Invitations to Tender are then issued to qualified and selected firms

See subsequent presentation ‘A Typical Tender Process at CERN’
Country of origin

“Country(ies) in which the bidder is established.”

If at least 40% of the total amount of the bid comes from a poorly balanced MS, then the whole bid will be treated as that from a bidder in a poorly balanced MS.

“Country(ies) where the supplies (including their components and sub-assemblies) are manufactured or undergo the last major transformation by the contractor or its sub-contractor”

If at least 60% of the total amount of the bid comes from a poorly balanced MS, then the whole bid will be treated as that from a bidder in a poorly balanced MS.
Alignment rule

Applicable for:

1. Contracts awarded on the lowest compliant basis (mainly supply contracts)

2. With a total amount exceeding 100’000 CHF.

RULE

Under certain conditions as defined in CERN Procurement Rules, a bidder offering goods originating* in poorly balanced Member States is allowed to align his price to that of the lowest bidder and thereby be awarded the contract.

* At least 60% for supply contracts or; at least 40% for service contracts awarded on the lowest compliant basis.
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”.

\[
\text{Return Coef.} = \frac{\% \text{ expenditure in the MS}}{\% \text{ contribution to CERN budget for this MS}}
\]

Status definition

Over a 4-year period:
- Very poorly balanced: \(< 0.40\)
- Poorly balanced (PB): \(0.40 \geq x < 1\)
- Well balanced (WB): \(\geq 1\)
Poorly balanced Member States (Supplies)
(1st March 2022 – 28 February 2023, based on the previous 4 calendar years):

<table>
<thead>
<tr>
<th>WellBalanced</th>
<th>PoorlyBalanced</th>
<th>VeryPoorlyBalanced</th>
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</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Belgium</td>
<td>Bulgaria</td>
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<td>Czech Republic</td>
<td>Croatia*</td>
<td>Denmark</td>
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<td>France</td>
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<td>Estonia*</td>
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<td>Hungary</td>
<td>Finland</td>
<td>India*</td>
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<tr>
<td>Italy</td>
<td>Germany</td>
<td>Israel</td>
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<td>Slovakia</td>
<td>Greece</td>
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<td>Switzerland</td>
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<td></td>
<td>Ukraine*</td>
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</tbody>
</table>

*Associate Member States
Impact of Doing business with CERN
Doing business with CERN: the facts
supplier survey (669 suppliers in 33 countries, 2017):

- 48% improved products and services
- 42% developed new products
- 55% improved technical knowledge in their field
- 18% found or opened a new market to address
- 62% used CERN as a marketing reference
Doing business with CERN: the facts

Using CERN as a marketing reference improve the reputation as suppliers
Procurement website
Website of the Procurement Service
http://procurement.web.cern.ch
# CERN Shopping List

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

<table>
<thead>
<tr>
<th>Publication date</th>
<th>Type of contract</th>
<th>Reference</th>
<th>Description</th>
<th>Cost Range (CHF)</th>
<th>Status</th>
<th>Next step</th>
</tr>
</thead>
<tbody>
<tr>
<td>23/02/2022</td>
<td>Supply</td>
<td>MS-4747/SCE</td>
<td>Supply of small industrial accessories ordered through an electronic catalogue</td>
<td>5M - 10M</td>
<td>Announcement</td>
<td>Market Survey 03/2022</td>
</tr>
<tr>
<td>10/02/2022</td>
<td>Experiments</td>
<td>MS-4752/EPICMS</td>
<td>Supply including design of a hypoxic and dry air generation plant</td>
<td>200k - 750k</td>
<td>Market Survey</td>
<td>Invitation to Tender 06/2022</td>
</tr>
<tr>
<td>03/02/2022</td>
<td>Services</td>
<td>MS-4744/SCE</td>
<td>Service contract for the provision of cleaning services on the Swiss part of CERN site</td>
<td>5M - 10M</td>
<td>Announcement</td>
<td>Market Survey 05/2022</td>
</tr>
<tr>
<td>19/01/2022</td>
<td>Supply</td>
<td>MS-4743/SCE</td>
<td>Framework Market Survey concerning the provision of general civil engineering works for the construction of new structures and Industrial buildings on the Swiss or French parts of the CERN site.</td>
<td>750k - 5M</td>
<td>Announcement</td>
<td>Market Survey 03/2022</td>
</tr>
<tr>
<td>17/01/2022</td>
<td>Services</td>
<td>MS-4720/SCE</td>
<td>Service contract for small-scale civil engineering works on the CERN site.</td>
<td>5M - 10M</td>
<td>Market Survey</td>
<td>Invitation to Tender 05/2022</td>
</tr>
</tbody>
</table>
HL-LHC Shopping list
https://project-hl-lhc-industry.web.cern.ch/wp/main-procurement-needs-hl-lhc

Main Procurement needs for HL-LHC

The Large Hadron Collider (LHC) is one of the largest scientific instruments ever built. To sustain and extend its discovery potential, the LHC will need a major upgrade in the 2020s. This will increase its luminosity (rate of collisions) by a factor of five beyond the original design value and the integrated luminosity (total collisions created) by a factor ten. The LHC is already a highly complex and exquisitely optimised machine so this upgrade must be carefully conceived and will require about ten years to implement. The new configuration, known as High Luminosity LHC (HL-LHC), will rely on a number of key innovations that push accelerator technology beyond its present limits.

Main Domains of Activity - HL-LHC Project

<table>
<thead>
<tr>
<th>Domain</th>
<th>Work Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cryogenics systems</td>
<td>WP9</td>
</tr>
<tr>
<td>Magnets components and assemblies</td>
<td>WP3, WP11</td>
</tr>
<tr>
<td>Electrical equipment, electronics &amp; instrumentation</td>
<td>WP4, WP5, WP6A, WP6B, WP7, WP13, WP18</td>
</tr>
<tr>
<td>Ultra High vacuum components and systems</td>
<td>WP12</td>
</tr>
<tr>
<td>Collimators and new material resistant to high temperatures</td>
<td>WP5, WP8, WP14</td>
</tr>
<tr>
<td>Cryostats and subcomponents for cryogenic equipment</td>
<td>WP3, WP4, WP6A, WP9, WP11</td>
</tr>
<tr>
<td>High precision assembling and manufacturing technologies</td>
<td>WP4, WP5, WP8, WP12, WP14</td>
</tr>
</tbody>
</table>

Project activities

- Procurement Overview
- WP1: Project Management
- WP2: Accelerator Physics & Performance
- WP3: Insertion Regions Magnets
- WP4: Crab Cavities & RF
- WP5: Collimation
- WP6A: Cold Powering
- WP6B: Warm Powering
- WP7: Machine Protection
- WP8: Collider Experiment Interface
- WP9: Cryogenics
- WP10: Energy Deposition & Absorber Coordination
- WP11: 11 T Dipole
- WP12: Vacuum
- WP13: Beam Diagnostics
- WP14: Beam Transfer & Kickers
- WP15: Integration & (De-) Installation
- WP16: Hardware Commissioning
- WP17: Infrastructure, Logistics & Civil Engineering
- WP18: Controls Technologies
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.
To ensure our emails reach your inbox please add our email procurement@cern.ch to your safe senders and check your spam filter settings.
Contacts at CERN (Procurement and Technical)
Contact in your country

ILO: Industrial Liaison Officer

Industrial Liaison Officers (ILO's) are appointed by CERN's Member States to facilitate the flow of communication between CERN and its suppliers. ILO's can provide advice on the opportunities available for doing business with CERN and the support available to firms in their local regions.

Mr Richard Farrow
Role: Head of CERN Industrial Liaison
Address: Daresbury Laboratory
Sci-Tech Daresbury
Daresbury
UK
WA4 4AD
Telephone: +44 (0)77 990 34475
Email: richard.farrow@stfc.ukri.org

Mr Hugh Alabaster
Role: United Kingdom ILO
Address: Swindon office
Polaris House
Swindon
UK
SN2 1FL
Telephone: +44(0)7508511298
Email: hugh.alabaster@stfc.ukri.org
Thank you