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- Please ask any questions in the 'Chat' window

#### For B2B meetings:

- We recommend using the Chrome browser and not to use 'remote desktop' to connect
- For more information, consult: https://ukcern.cern.b2match.io/how-it-works
- In case of urgent problems, contact Merethe Morer-Olafsen on +41 75 411 05 52



# Doing Business with CERN UK@CERN

**Adam Horridge** 

1st March 2021



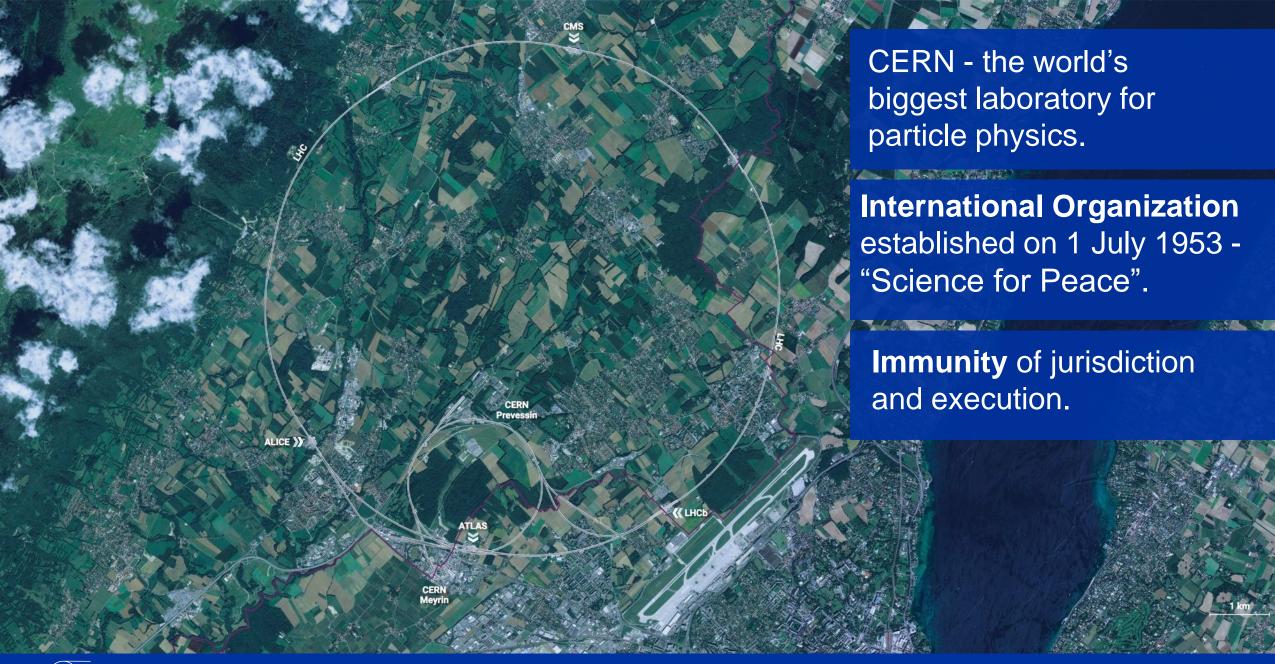
#### **AGENDA**

- Introduction
- Statistics
- Procurement @ CERN the rules
- Impact of Doing business with CERN
- Procurement website
- Contacts



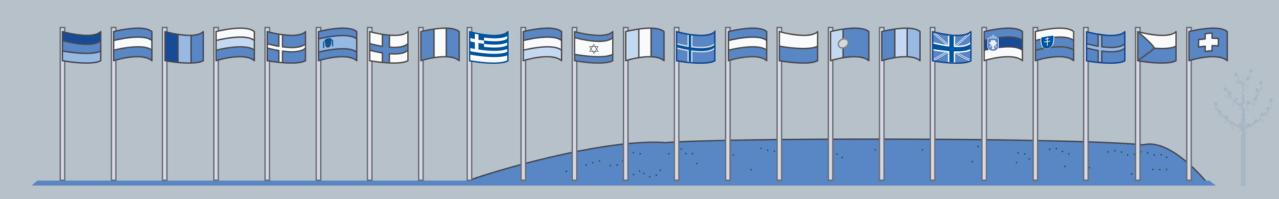








# CERN is entitled to establish its own internal rules necessary for its proper functioning, including:



**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

6 Associate Member States

3 Observers



Yearly budget ~ 1100 MCHF

~ 2500 Staff members

~ **2000** contractors' employees

from **77** countries

~ **13000** physicists /users



#### Four pillars underpin CERN's mission





# **Yearly Budget (contributions 2020)**

| Member States' Contributions in 2020<br>(Total: 1,199,892,750 CHF) |        |                        |                |       |                     |
|--|--------|------------------------|----------------|-------|---------------------|
| Country  | %      | In CHF, 2020<br>prices | Country        | %     | In CHF, 2020 prices |
| Germany  | 20.26% | 243,129,850            | Romania        | 1.07% | 12,807,800          |
| United Kingdom   | 15.41% | 184,948,850            | Portugal       | 1.06% | 12,716,250          |
| France   | 13.58% | 162,966,200            | Greece         | 1.03% | 12,308,750          |
| Italy  | 10.02% | 120,245,950            | Czech Republic | 0.96% | 11,525,250          |
| Spain  | 6.90%  | 82,844,100             | Hungary        | 0.63% | 7,516,200           |
| Netherlands  | 4.43%  | 53,197,200             | Turkey**       | 0.56% | 6,731,100           |
| Switzerland  | 4.03%  | 48,410,300             | Slovakia       | 0.47% | 5,691,350           |
| Poland   | 2.71%  | 32,472,850             | Bulgaria       | 0.30% | 3,578,650           |
| Belgium  | 2.61%  | 31,269,000             | Pakistan**     | 0.24% | 2,880,000           |
| Sweden   | 2.54%  | 30,504,300             | Serbia         | 0.23% | 2,752,000           |
| Norway   | 2.25%  | 27,014,250             | Slovenia*      | 0.09% | 1,065,450           |
| Austria  | 2.10%  | 25,210,350             | Cyprus*        | 0.08% | 1,000,000           |
| Israel   | 1.81%  | 21,734,350             | Croatia**      | 0.08% | 1,000,000           |
| Denmark  | 1.72%  | 20,606,100             | Lithuania**    | 0.08% | 1,000,000           |
| India**  | 1.36%  | 16,293,950             | Ukraine**      | 0.08% | 1,000,000           |
| Finland  | 1.29%  | 15,472,350             |                |       |                     |

<sup>\*</sup> Associate Member State in the pre-stage to membership

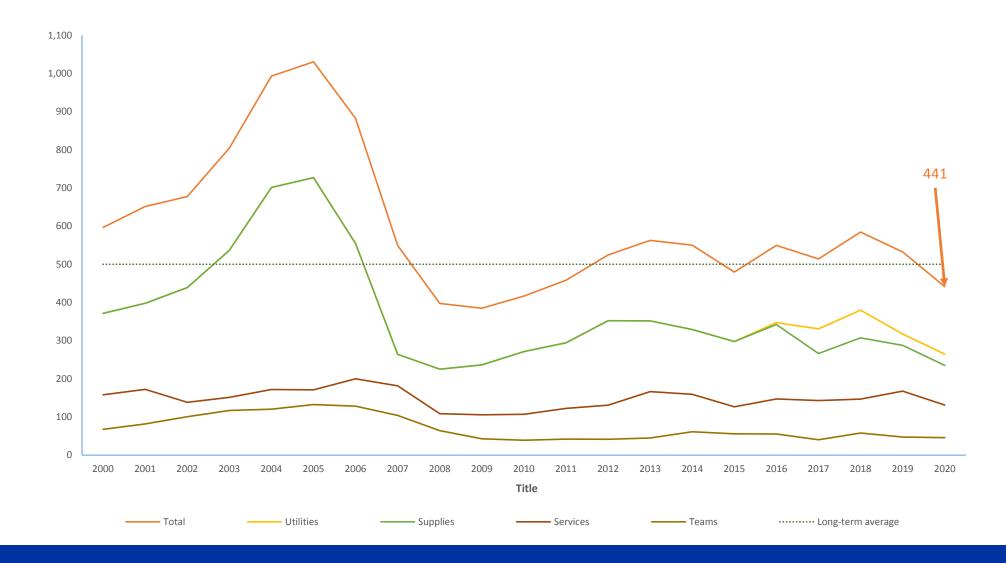


<sup>\*\*</sup> Associate Member State



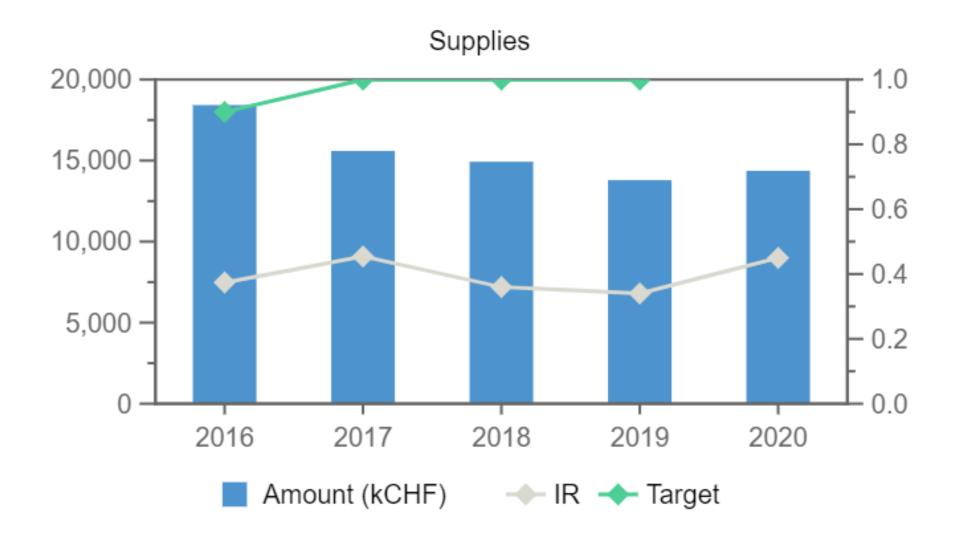


## **Procurement Expenditure**





## **UK Industrial Return\* (supplies)**







## **UK Industrial Return\* (services)**







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





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





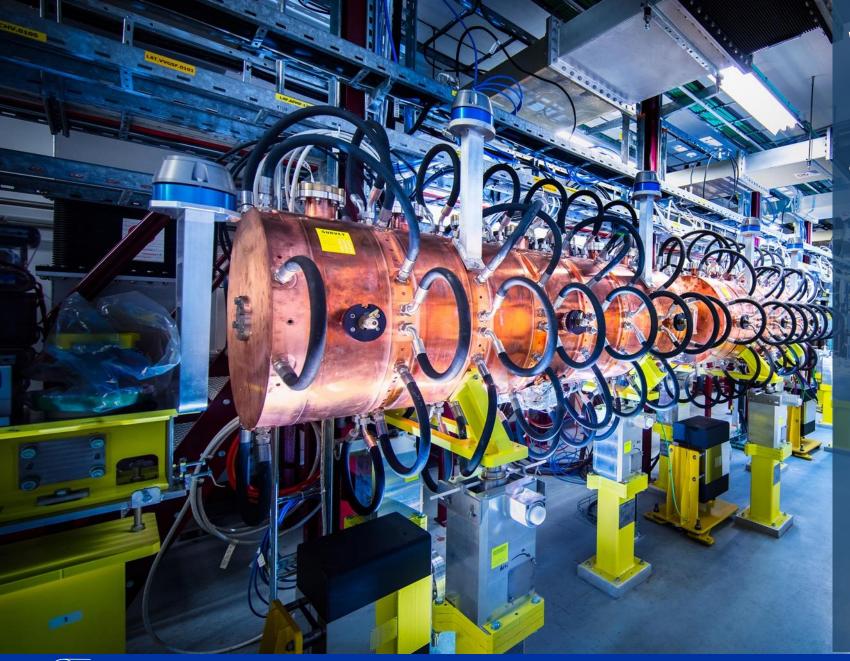
- Information Technology
  - Computing systems
  - Servers
  - Software
  - Network equipment
  - Personal computer equipment





- 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





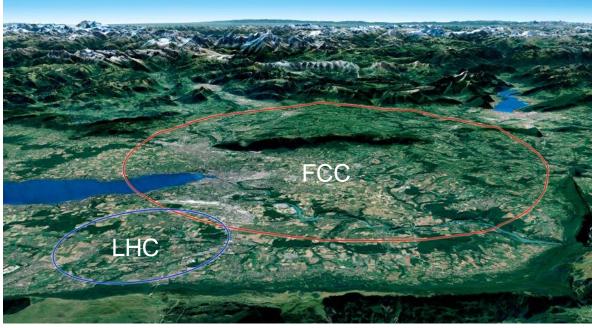
## Two biggest projects for future of particle physics



#### **Future Circular Collider (FCC)**



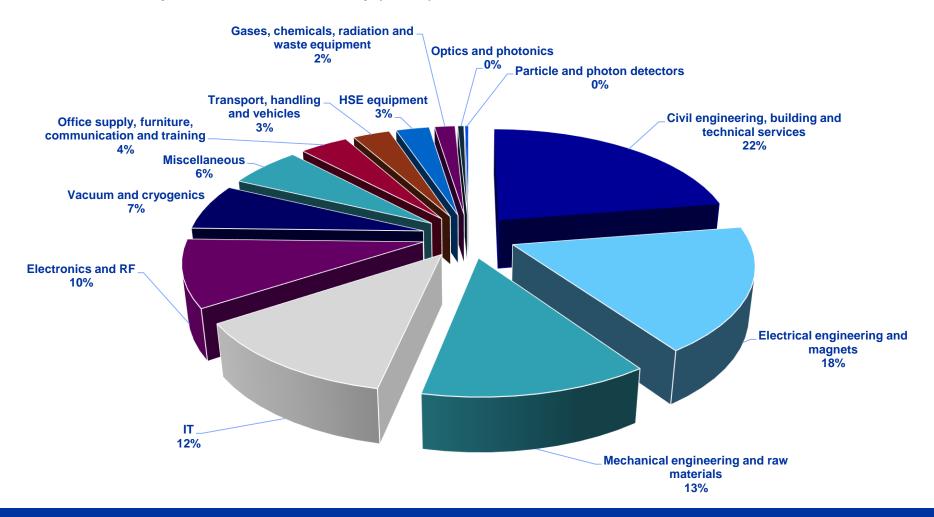
- New technology magnets → 100 TeV pp collisions in 100km ring
- e<sup>+</sup>e<sup>-</sup> collider (FCC-ee) as 1<sup>st</sup> step?





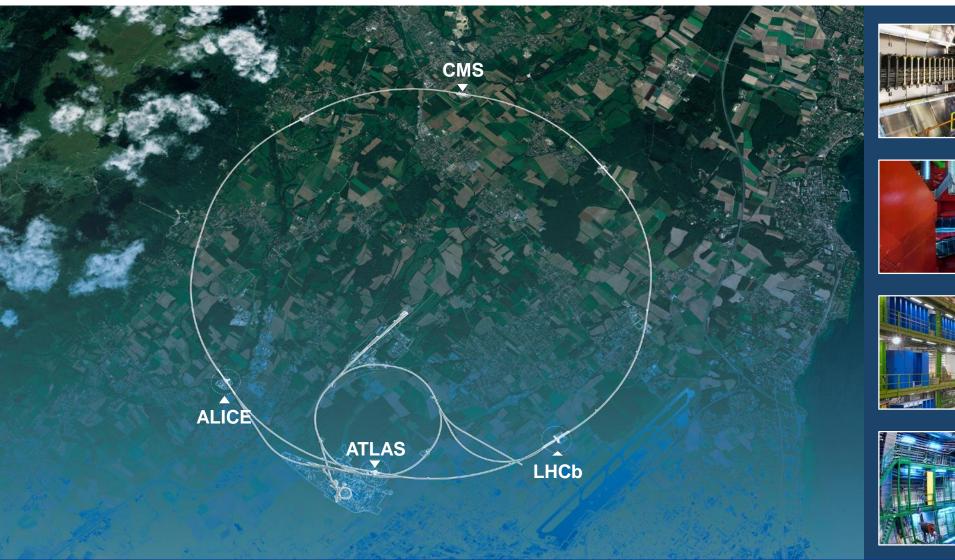
# **Supplies** (287MCHF spent in 2019 – CERN budget only)

2019 Expenditure of all Member States by Procurement Code Family (MCHF)





# We also buy for the LHC experiments













#### How do we buy?

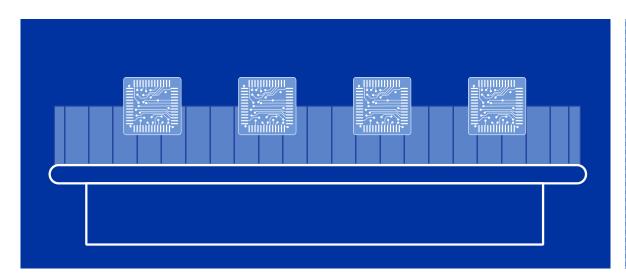
Off-the shelf or non-standard products which can be produced with existing manufacturing techniques or technologies:

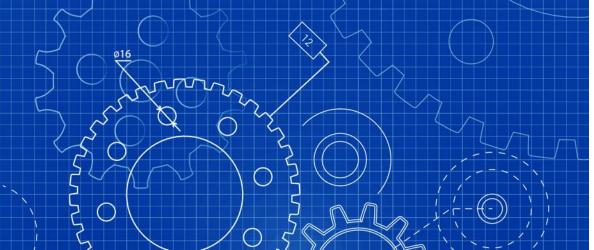
Functional specification

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

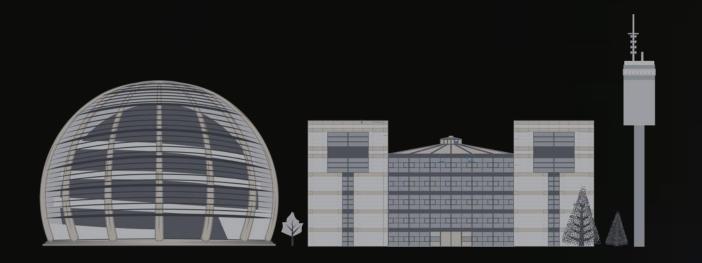
Build-to-Print specification











# 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



#### Principles of the Procurement Rules (2/4)

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

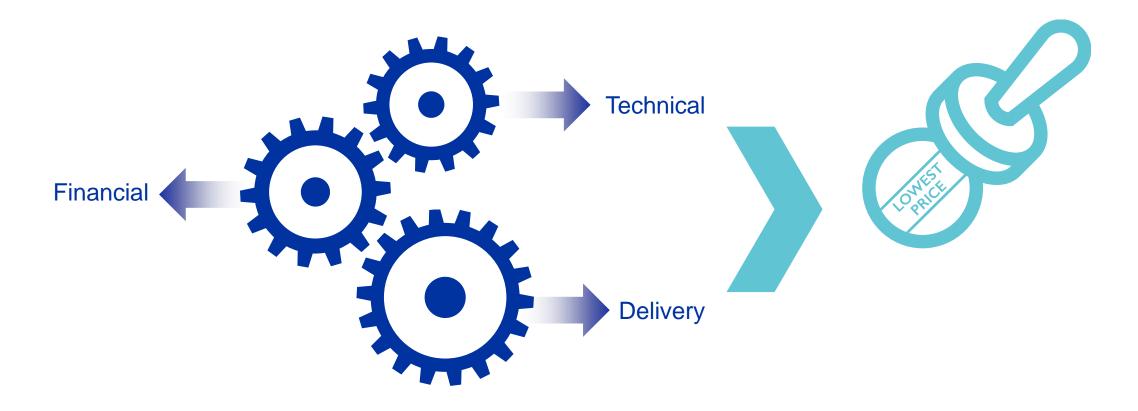
**Confidentiality:** Opening and evaluation of bids as well as negotiations are not public



## Principles of the Procurement Rules (3/4)

Award for supplies (and services, exceptionally) based on:

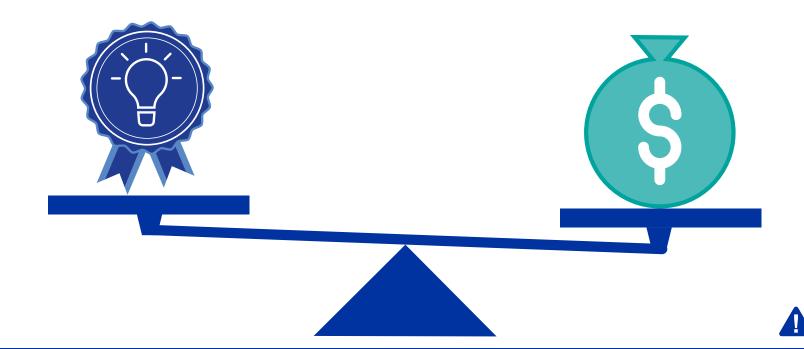
<u>Lowest compliant bid</u>





#### Principles of the Procurement Rules (4/4)

Award for industrial services based on:
Best Value For Money





No alignment rule, see slide 34

#### Enquiries between 10'000 and 200'000 CHF

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

- 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;
- 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.)

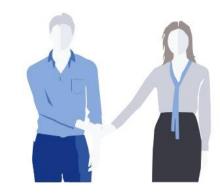




#### Enquiries exceeding 200'000 CHF (1/2)

#### "Market Survey" (MS)

- Prior announcement in 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.





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



#### Enquiries exceeding 200'000 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.



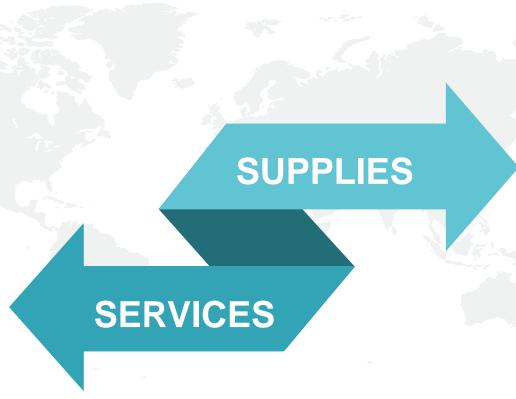




#### **Country of origin**

"Country(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 subassemblies) are manufactured or undergo the last major transformation by the contractor or its subcontractor"

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:**



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



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

# 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:

Very poorly balanced: < 0.40

Poorly balanced (PB):  $0.40 \ge x < 1$ 

Well balanced (WB): ≥ 1

Status definition

% expenditure in the MS

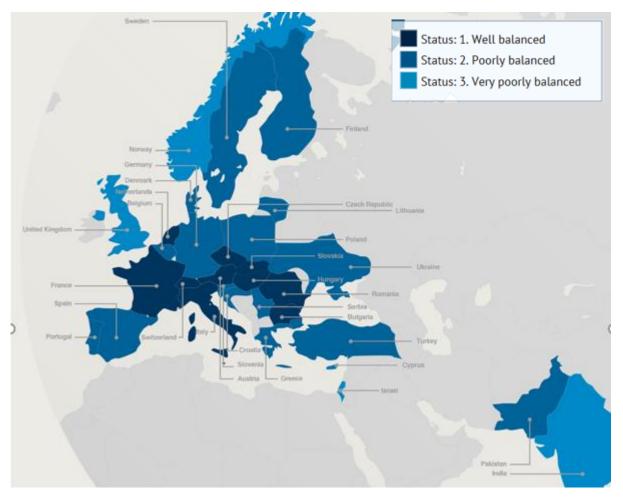
Return Coef.= 

% contribution to CERN budget for this MS



# Provisional Member State Balancing (Supplies)

(1st March 2021 – 28 February 2022, based on the previous 4 calendar years):



| Well Balanced   | Poorly Balanced  | Very Poorly Balanced                |
|---|--|-------------------------------------|
| Austria Bulgaria Czech Republic France Hungary Italy Netherlands Romania Slovakia Switzerland | Belgium Croatia* Cyprus* Denmark Finland Germany Greece Lithuania* Pakistan* Poland Portugal Serbia* Slovenia* Spain Sweden Turkey* Ukraine* | India* Israel Norway United Kingdom |

<sup>\*</sup>Associate Member States



# Limited tendering

« Limited tendering is foreseen by the CERN Procurement Rules to improve the industrial return of very poorly balanced Member States. »

#### **Conditions**

Firms established in very poorly balanced Member States only (industrial return <0.4);

Used in case where there is sufficient competition;

ILO can ask to add firms, provided they are established in very poorly Member States.





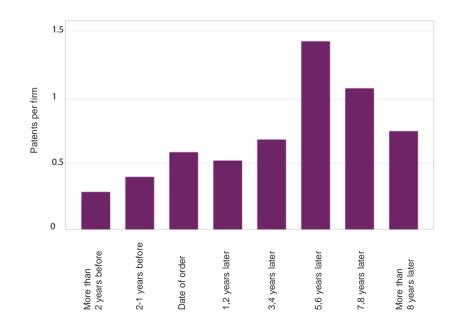


# The economical impact of CERN Procurement on supplier's performance (Castelnovo et al, 2018)

Empirical studies (by the analysis of financial data from 1995 to 2008 from 365 CERN suppliers for the LHC) show that after working with CERN on high-tech contracts, CERN suppliers out-perform their peers by:

Investing more in R&D and filing more patents

Higher productivity, revenue and profitability

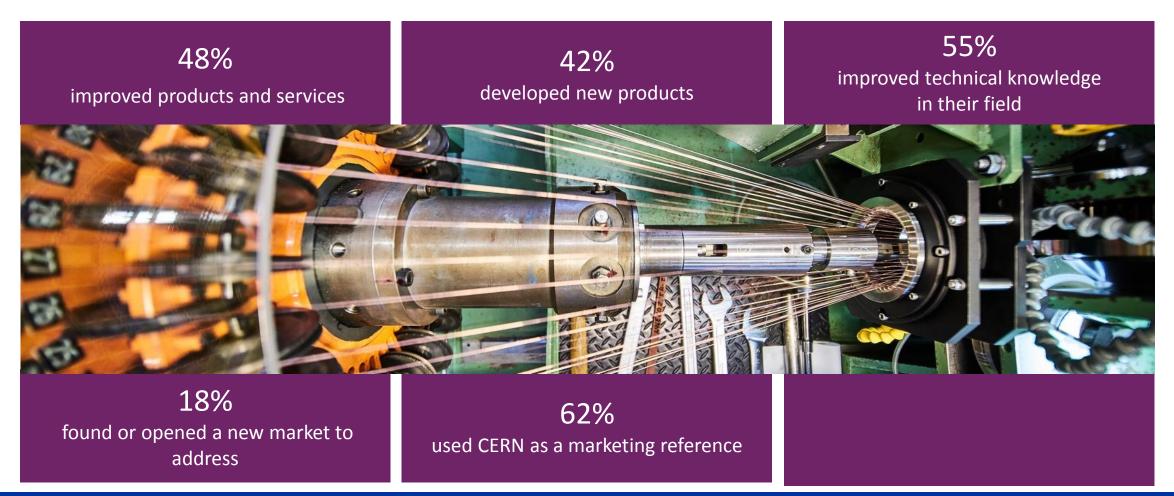






# Doing business with CERN: the facts

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





# Doing business with CERN: the facts

CERN

Using CERN as a marketing reference improve the reputation as suppliers







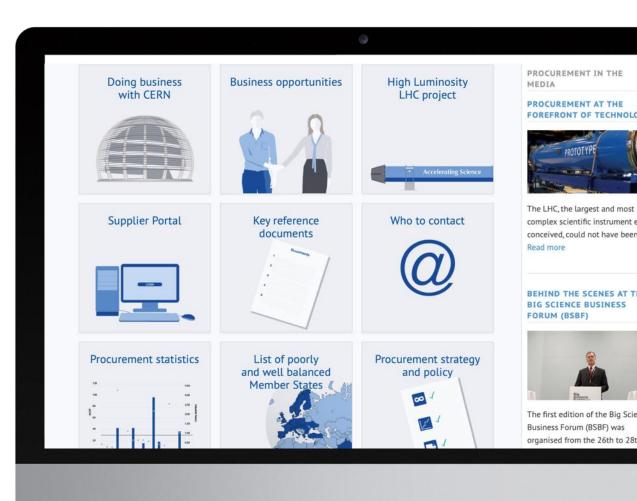


# Social Cost-Benefit Analysis (CBA) calculated by the University of Milan

"Each CHF invested in HL-LHC project pays back approximately 1.8 CHF on societal benefits, including scientific, economic and cultural value (development of innovative technologies, industrial spillovers, skills acquired by students, etc.)."



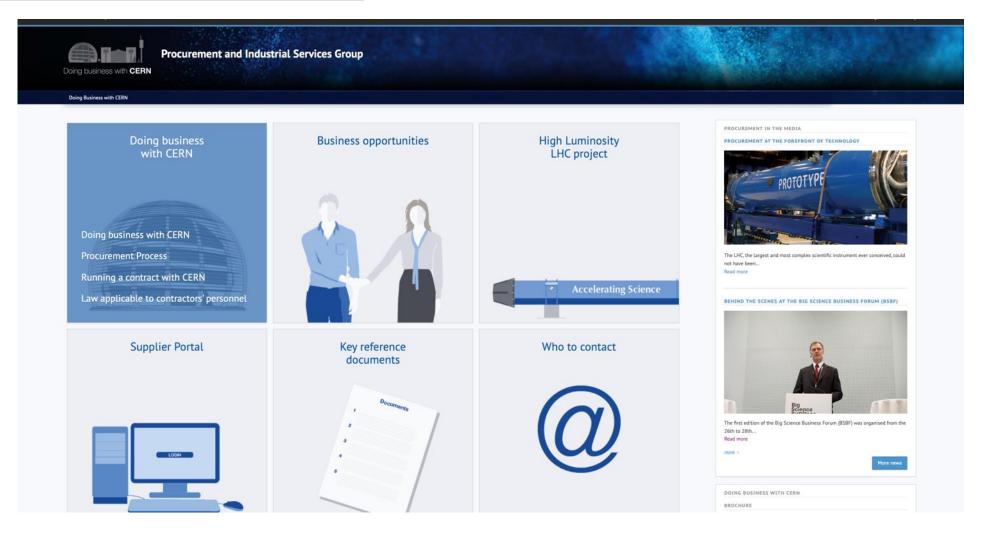
# Procurement website





## Website of the Procurement Service

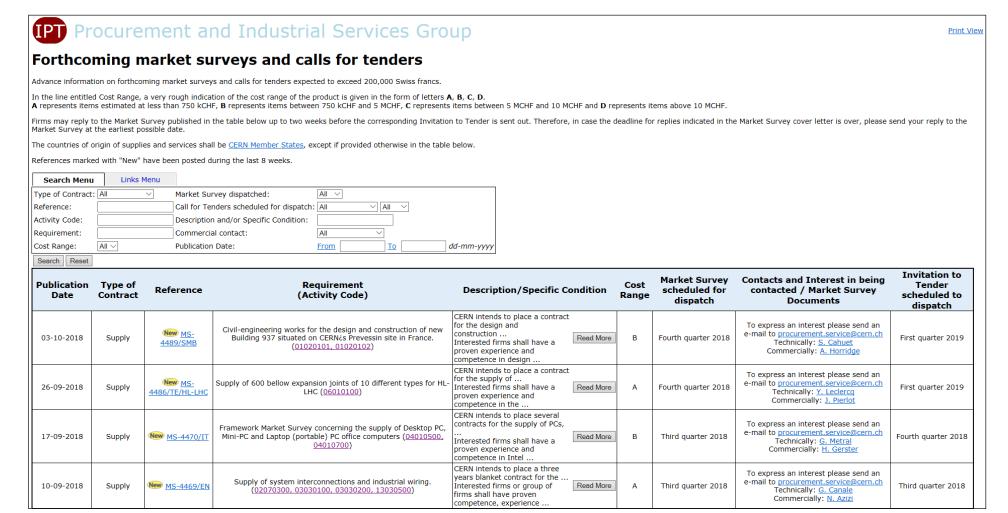
http://procurement.web.cern.ch





# **CERN Shopping List**

#### https://found.cern.ch/java-ext/found/CFTSearch.do





# **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 Activitiy - HL-LHC Project                  | Work Packages                         |
|---|---------------------------------------|
| Cryogenics systems  | WP9                                   |
| Magnets components and assemblies                           | WP3, WP11                             |
| Electrical equipment, electronics & instrumentation         | WP4, WP5, WP6A, WP6B, WP7, WP13, WP18 |
| Ultra High vacuum components and systems                    | <u>WP12</u>                           |
| Collimators and new material resistant to high temperatures | WP5, WP8, WP14                        |
| Cryostats and subcomponents for cryogenic equipment         | WP3, WP4, WP6A, WP9, WP11             |
| High precision assembling and manufacturing technologies    | WP4, WP5, WP8, WP12, WP14             |

#### **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.



#### **CERN** e-Procurement

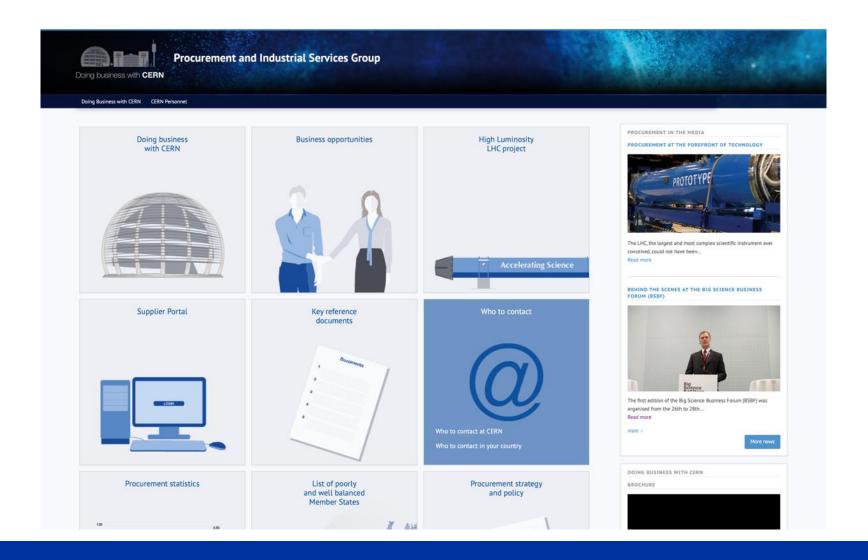




To ensure our emails reach your inbox please add our email **procurement@cern.ch** to your safe senders and check your spam filter settings.



# 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

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# Thank you

