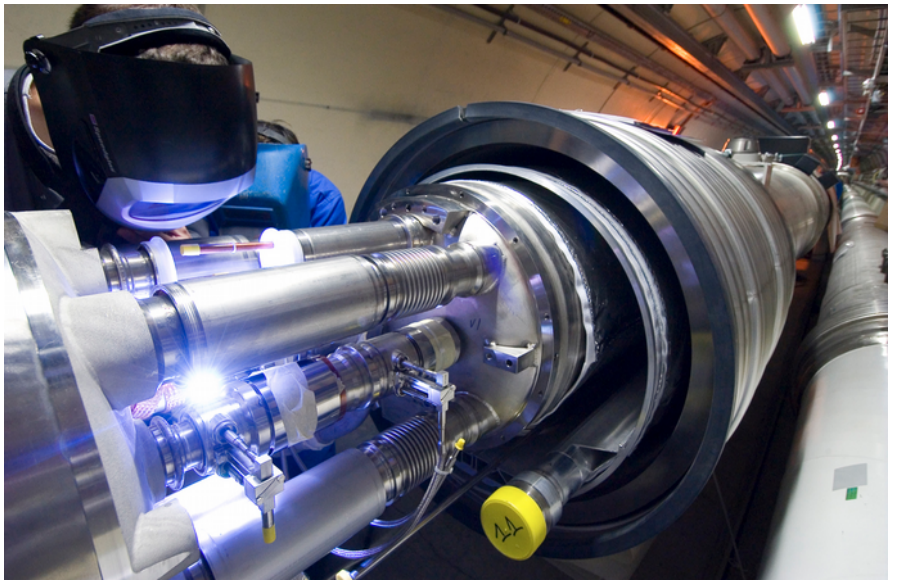


Opportunità per l'industria italiana al CERN

Mauro Morandin - INFN
Jerome Pierlot - CERN

Sommario

- il CERN
- forniture e ritorno industriale
- l'industrial liaison officer
- mission e principi del procurement
- procedure
- come essere un fornitore di successo
- contatti

CERN: European Organization for Nuclear Research

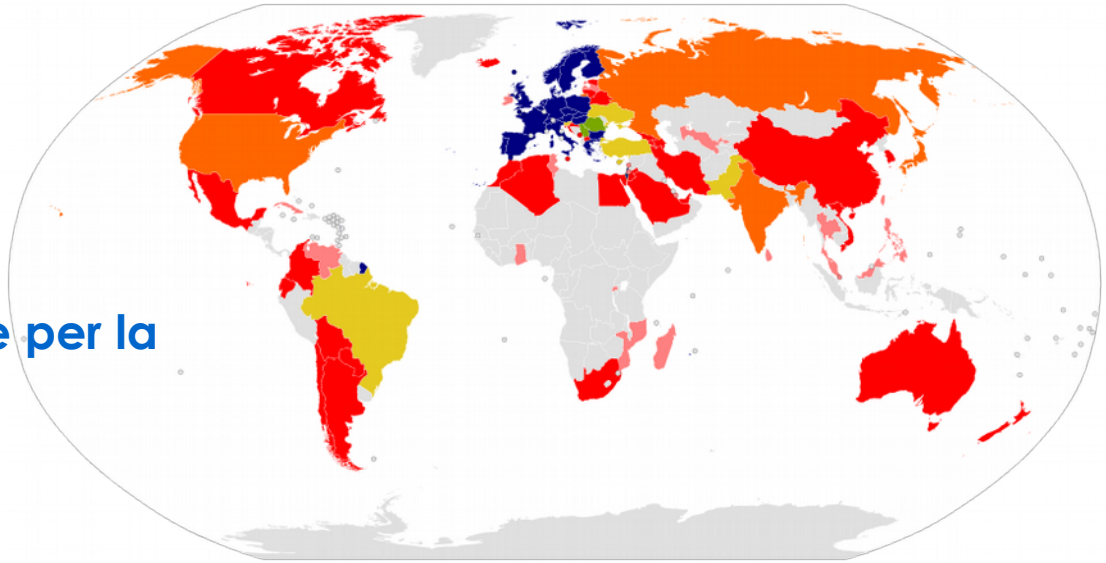
- il **più grande** e importante laboratorio al mondo per la fisica fondamentale
  - fondato nel 1954, **primo esempio** di grande organizzazione europea nata nel dopoguerra, da

    Belgio, Danimarca, Francia, Germania, Grecia, Italia, Olanda, Norvegia, Svezia, Svizzera, Gran Bretagna e Yugoslavia
- Attualmente comprende **22 Stati Membri**
  - ultimi ingressi: Israele (2014), Romania (2016)

  6 Associati:
  - Cipro, Slovenia, Serbia, India, Pakistan, Turchia, Ucraina
- Osservatori: USA, Russia, Giappone

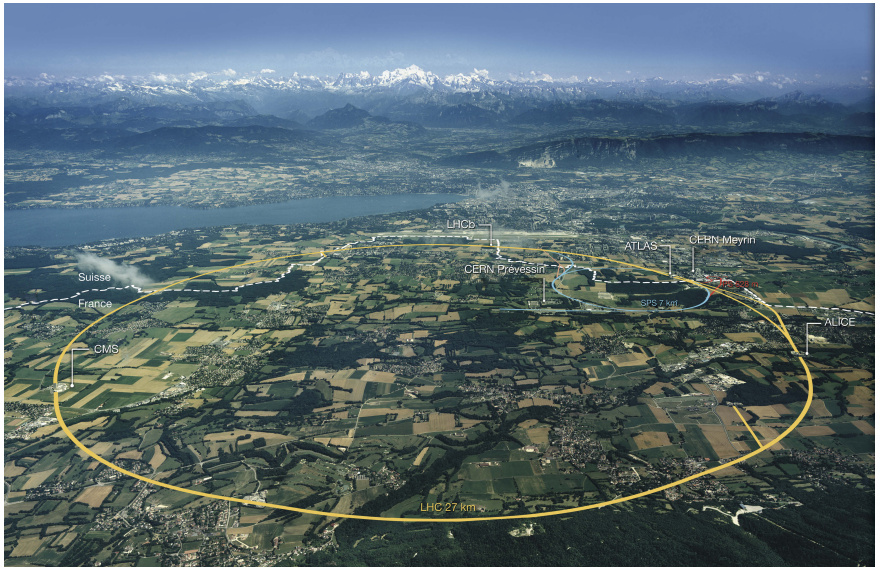
La comunità scientifica del CERN

- **budget annuale: ~ 1 B€**
- **2500 dipendenti**
  - di cui solo il 3% sono fisici ricercatori
- missione: realizzare e far funzionare **acceleratori di particelle per la ricerca fondamentale**

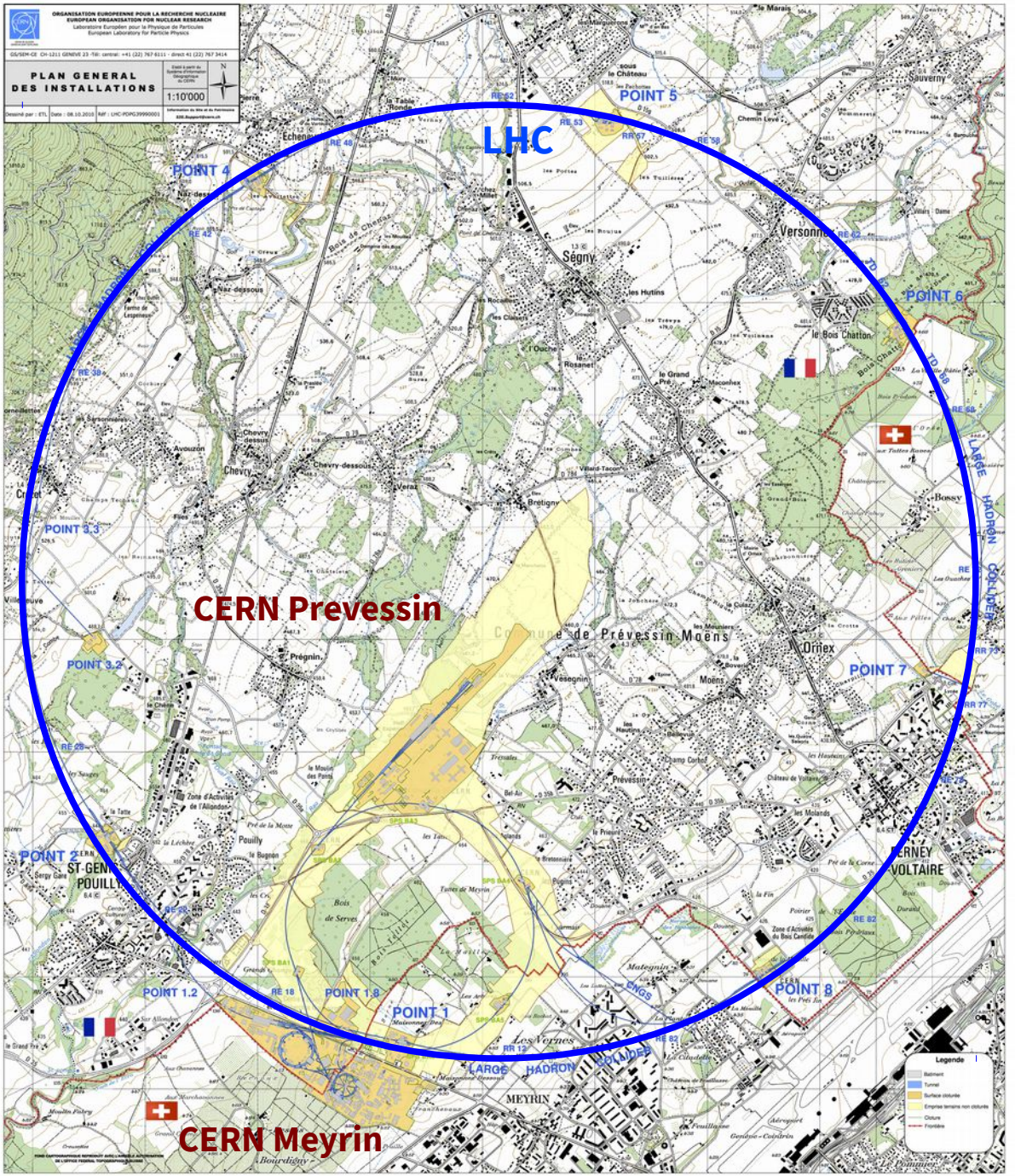


- permette ad una comunità di **13000 scienziati** da oltre **113 paesi** di studiare i componenti fondamentali della materia e le loro interazioni per affrontare con tecnologie di punta questioni alla frontiera delle conoscenze, come:
  - **come si è formato e come evolverà l'Universo**
  - **perchè l'antimateria è scomparsa dopo il Big Bang**
  - **che cosa costituisce la materia oscura**
  - **....**

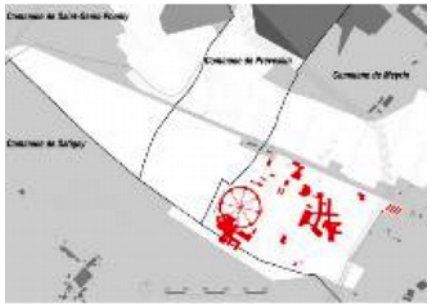
I siti del CERN



- CERN Meyrin: 80 ettari
- CERN Previssin: 83 ettari
- altri 15 siti secondari



Lo sviluppo del CERN



1950-1960

1960-1975

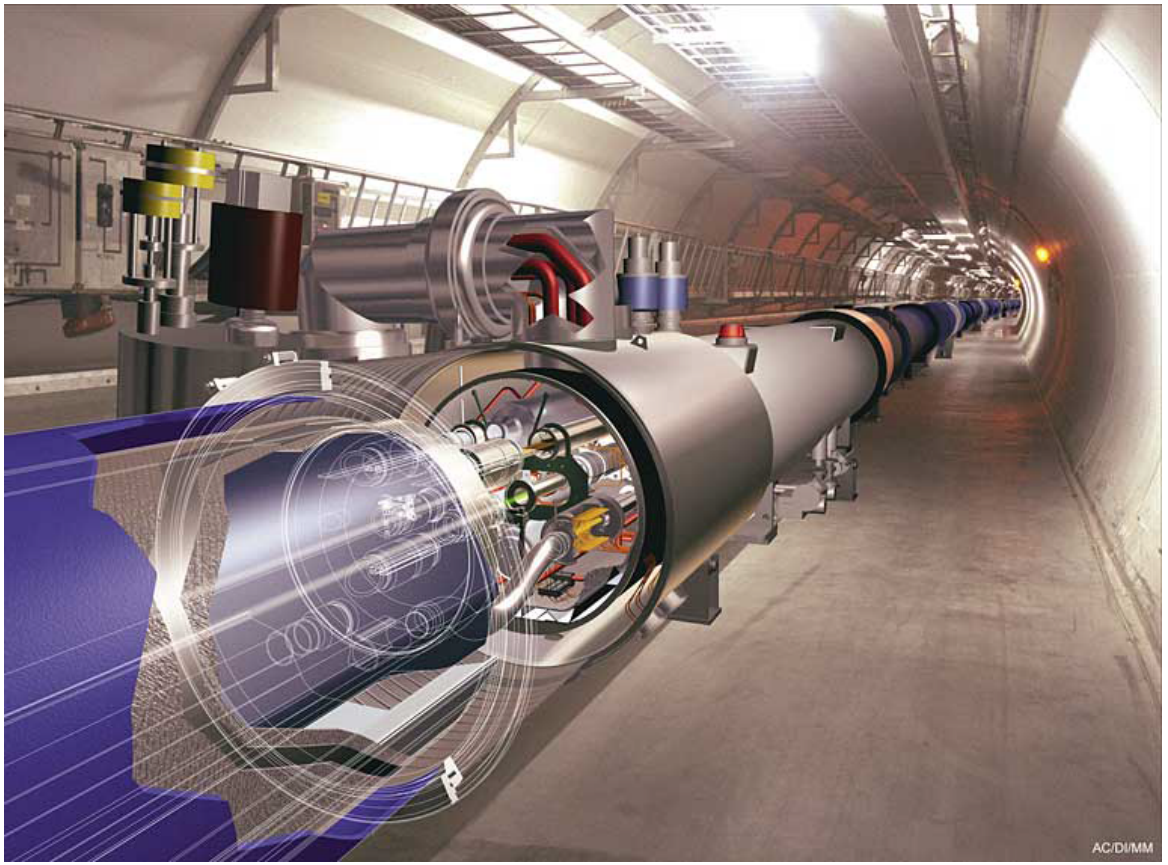
1975-1985

1985-2010

- Numero di edifici :~ **674**
  - da 10 m² fino a 20.000 m² - totale: 425,000 m²
  - 60% degli edifici hanno **più di 30 anni**
- e inoltre:
  - **60 km di tunnel**, 30 km di strade
  - 1000 km di condotti sotterranei

LHC

- Il Large Hadron Collider (LHC) è il **più grande strumento scientifico** del mondo per investigare le proprietà della materia

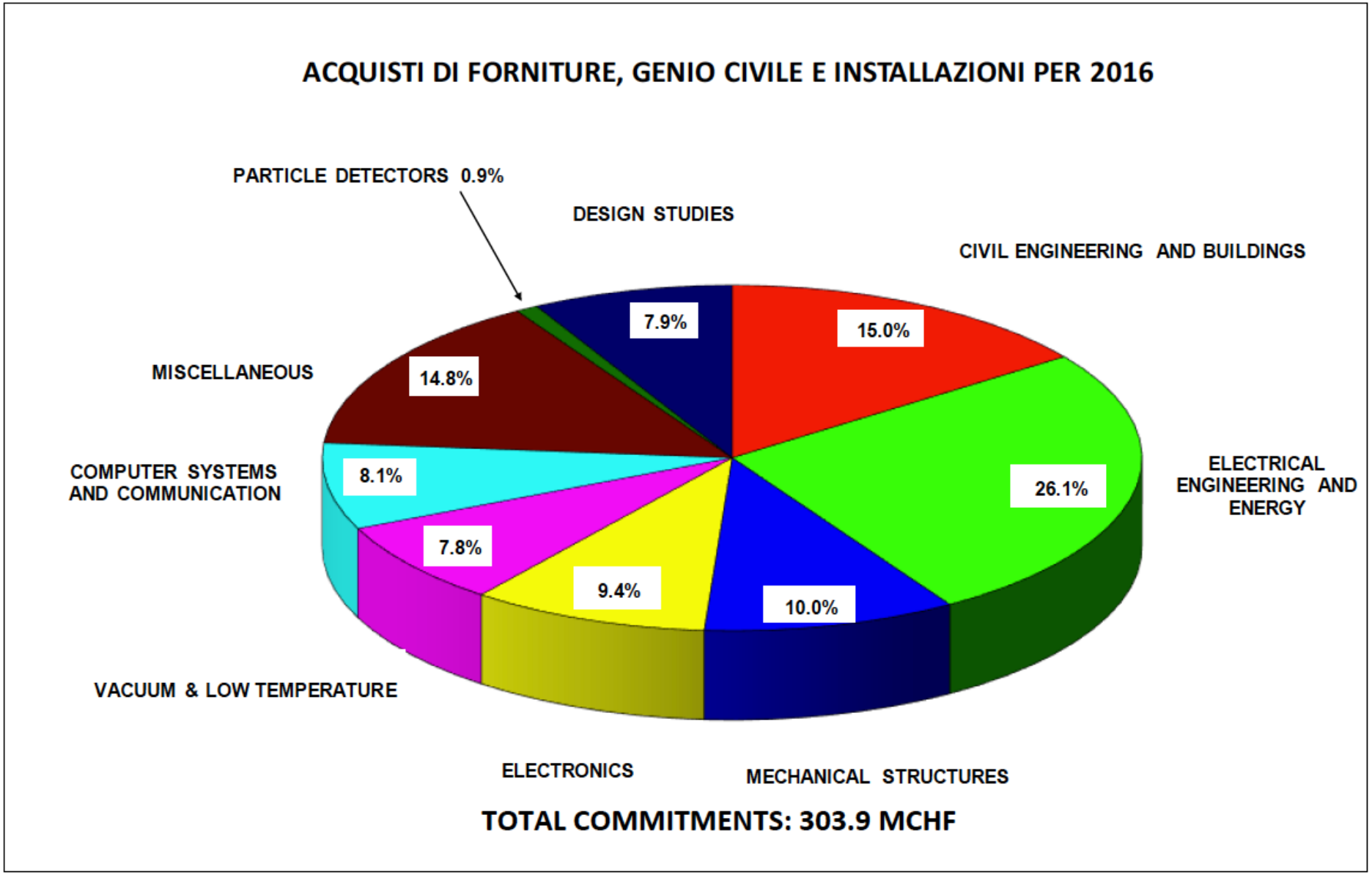


- vi circolano ad un'**energia prima mai raggiunta** protoni o ioni pesanti
- tunnel di **26.7km**, di cui oltre 24 km di **magneti superconduttori** operanti a 8.3 T e ad una temperatura molto vicina allo zero assoluto
  - senza magneti superconduttori LHC sarebbe 4 volte più grande e consumerebbe **900 GW** invece di **120 MW**

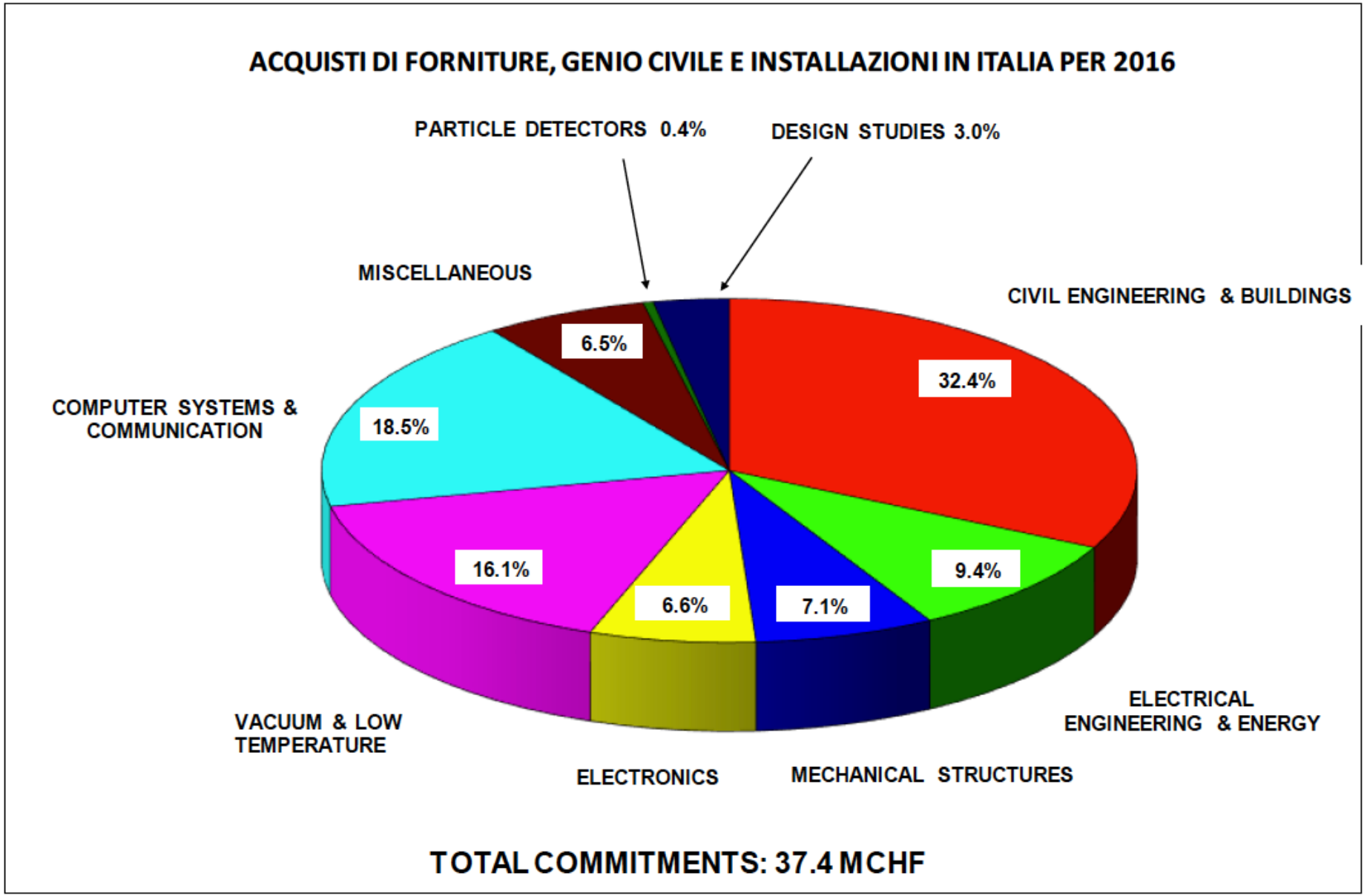
LHC: origini e sviluppo molto italiane

- LHC, con i suoi rivelatori, è stato il frutto di uno **sviluppo tecnologico durato vent'anni**
- **l'Italia ha contribuito in modo essenziale** alla sua realizzazione, in particolare con lo sviluppo dei magneti superconduttori
- dei 1232 grandi dipoli circa un terzo sono stati realizzati in Italia
  - ~ 18% del budget di costruzione di LHC pari a 6 miliardi di €

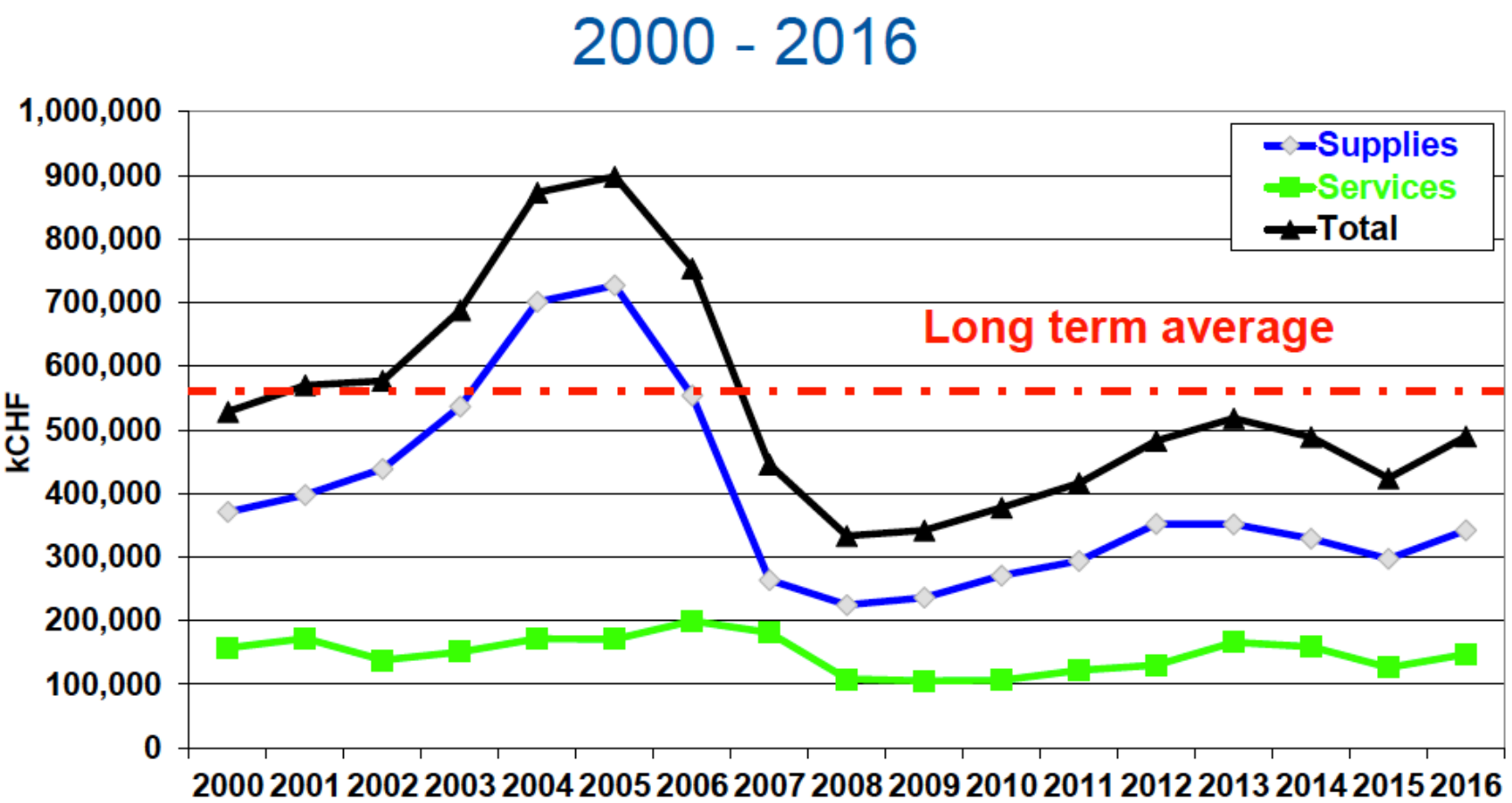
Forniture al CERN nel 2016



Forniture da azende italiane nel 2016



Spesa del CERN per forniture e servizi



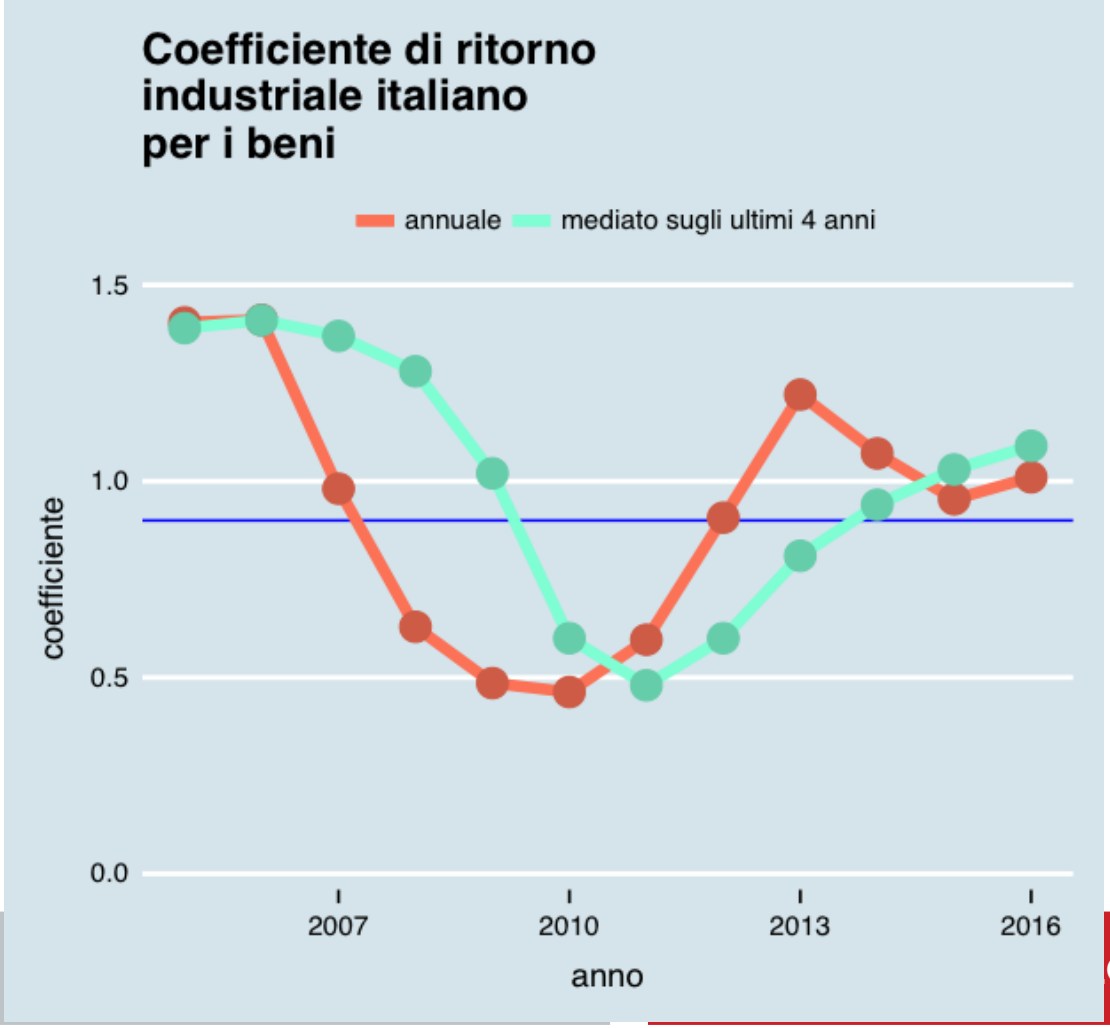
Impatto italiano al CERN

- scienziati italiani al CERN
  - **250 dipendenti** (10% del totale)
  - **altri 2000** (15% circa del totale) fra studenti e collaboratori
- il contributo italiano al Cern nel 2016: **114 M€** (11% del budget Cern)
- le aziende italiane registrate come fornitori del Cern: **~ 1000**
- aziende italiane che hanno avuto ordini negli ultimi 5 anni: **~ 500**
- pagamenti del CERN ad aziende italiane nel **2016: 46.2 MChF**
  - **37.4 MChF** per i beni, **8.8 MChF** per i servizi industriali
  - nel **2015**: **38.4 MChF** di cui circa **31 MChF** per forniture di beni e **7.4 MChF** per servizi

Come viene misurato il ritorno industriale

$$CR = \frac{\text{quota percentuale di ordini acquisiti}}{\text{quota percentuale di contributo al budget del CERN}}$$

- negli ultimi anni tale parametro è **> 1**
- l'Italia è **uno dei 6 paesi** membri (su 26) che si trovano in questa situazione
  - unico fra i grandi paesi europei a parte Francia e Svizzera che ospitano il CERN



ILO

I' Industrial Liaison Officer (ILO) è una figura prevista dal CERN allo scopo di:

- **agevolare il laboratorio** nella ricerca dei migliori partner industriali nei paesi membri
- **promuovere e incentivare** la partecipazione delle aziende alle procedure del CERN per l'acquisizione di beni e servizi in modo da massimizzare il ritorno industriale

I' ILO italiano per il CERN è stato istituito dai Ministeri degli Affari Esteri e dell'Istruzione Università e Ricerca, di concerto con l'Istituto Nazionale di Fisica Nucleare (INFN)

l'attività dell'ufficio ILO attualmente è basata a Padova e viene sostenuta finanziariamente dall'INFN

Attività ILO

- L'ufficio ILO fornisce alle aziende informazioni sulle **gare previste e sulle modalità di partecipazione**
  - Viene impiegato a questo scopo un database in cui sono registrate ad oggi oltre **1000 aziende italiane**
  - le aziende vengono contattate sulla base di un sistema di **codici di attività** (categorie merceologiche) che il CERN assegna ad ogni procedura di gara
- l'ufficio ILO è poi a disposizione della aziende italiane che intendono **presentare al CERN** i propri settori di attività e le proprie competenze, per indirizzarle verso gli interlocutori più appropriati.
- Si occupa infine di organizzare **eventi sul territorio nazionale e al CERN,** dedicati alle imprese italiane
  - ultimi due eventi del 2017: **Italy at CERN,** ultima edizione, 40 aziende presenti con propri stand per 3 giorni, **Italian Companies at CERN** per presentare nuove aziende al CERN
- partecipa infine alle riunioni del Comitato Finanze

European Organization for Nuclear Research

Organisation européenne pour la recherche nucléaire

CERN & Italian Industries

Roma, 24 October 2017

Jérôme Pierlot

Legal framework

- **CERN**, an **Intergovernmental Organization**, was established in July 1953, by the "Convention for the establishment of a European Organization for Nuclear Research";
- As an Intergovernmental Organization, CERN is not a legal entity under national law but governed by public international law;
- CERN benefits from immunity from national jurisdiction and execution. Thus, legal disputes between CERN and its suppliers and contractors are not submitted to national courts but solved via **international arbitration**;
- CERN is thus entitled to establish **its own internal rules necessary** for its proper functioning, such as the rules under which it **purchases** equipment and services.

Mission of Procurement and Industrial Services

The mission of the Procurement and Industrial Services group is to:

- procure all supplies and services for CERN;
- meeting all requirements;
- at the lowest possible overall cost, while;
- achieving balanced industrial return for the CERN Member States, and;
- respecting the CERN Procurement Rules.

Procurement Principles

- CERN purchases supplies and services and awards contracts in compliance with the principles of *transparency* and *impartiality* ;
- **Limited to firms established in the Member States** ;
- Invitation to tender documents are drafted in an *objective* way so as to guarantee *fair competition* ;
- As a rule, CERN's tendering procedure is *selective* and does not take the form of open invitations to tender or price enquiries ;
- The opening, negotiation and evaluation processes of the bids are *strictly confidential* ;
- *Award basis:*
  - Is either the lowest; or
  - Represents the best value for money.

What do we buy?

Recurrent supplies and services

- **Civil engineering**

Buildings, roadworks

- **Utilities**

Cooling & ventilation

Power distribution, cables, overhead cranes

- Infrastructure & services

Metal structures
Mechanical engineering
Radiation shielding
Transport & handling
Safety & access control

- Installation, operation & maintenance
- Data acquisition, computing & networking
- Various supplies

Furniture, tooling, gases, etc.

What do we buy?

Accelerator technologies required for consolidation projects and new developments

- Industrial controls & field buses
- Timing & “fast” real-time controls
- Beam collimation
- Beam injection, ejection & dump
- Radio-frequency equipment
- Power converters
- Beam instrumentation & diagnostics
- Permanent and electro-magnets
- Cryogenic equipment
- Vacuum equipment

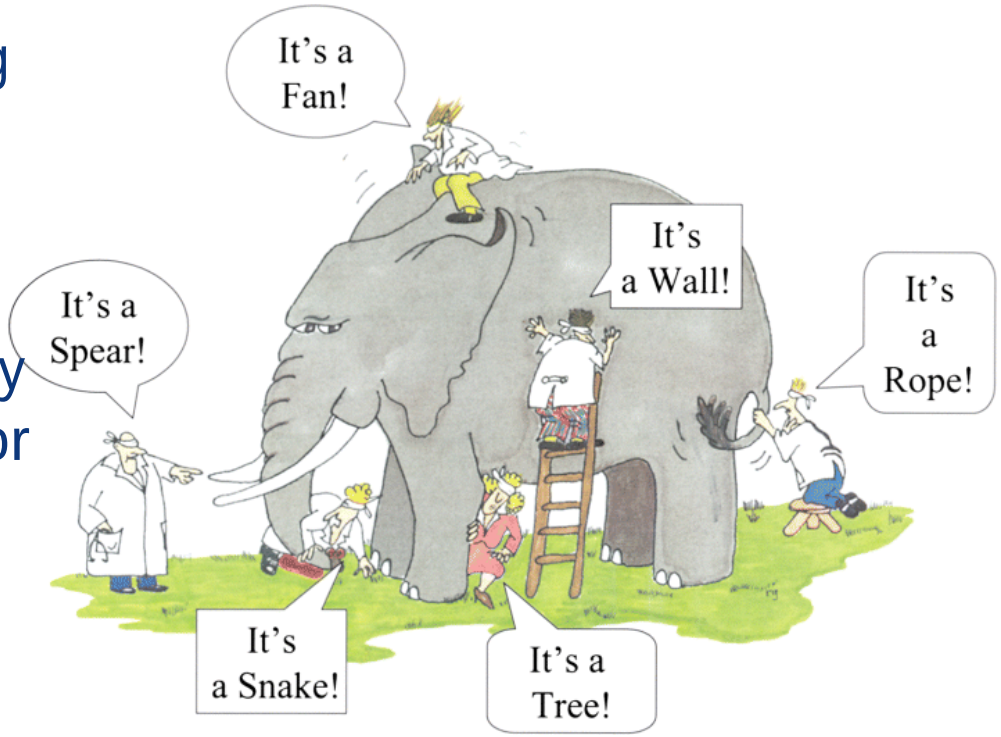
What do we buy ?
Standard or Non-Standard?

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

  => *functional specification*

- *Non-standard* products where industry has neither the required *know-how* nor the *immediate interest* to develop and design the products for its existing markets => *built to print*

- Prototypes and/or pre-series needed?



CERN “Shopping list”

FP Procurement & Industrial Services Group

Print View

Forthcoming market surveys and calls for tenders

Advance information on forthcoming market surveys and calls for tenders expected to exceed 200,000 Swiss francs.

In the line entitled Cost Range, a very rough indication of the cost range of the product is given in the form of letters **A**, **B**, **C**, **D**.
A represents items estimated at less than 750 kCHF, **B** represents items between 750 kCHF and 5 MCHF, **C** represents items between 5 MCHF and 10 MCHF and **D** represents items above 10 MCHF.

Firms may reply to the Market Survey published in the table below up to two weeks before the corresponding Invitation to Tender is sent out. Therefore, in case the deadline for replies indicated in the Market Survey cover letter is over, please send your reply to the Market Survey at the earliest possible date.

The countries of origin of supplies and services shall be CERN Member States, except if provided otherwise in the table below.

References marked with "New" have been posted during the last 8 weeks.

Search Menu | Links Menu

Type of Contract:	All	Market Survey dispatched:	All
Reference:		Call for Tenders scheduled for dispatch:	All / All
Activity Code:		Description and/or Specific Condition:	
Requirement:		Commercial contact:	All
Cost Range:	All	Publication Date:	From To dd-mm-yyyy

Search Reset

Publication Date	Type of Contract	Reference	Requirement (Activity Code)	Description/Specific Condition	Cost Range	Market Survey scheduled for dispatch	Contacts and Interest in being contacted / Market Survey Documents	Invitation to Tender scheduled to dispatch
07-07-2016	Supply	New MS-4212/SMB	Framework Market Survey concerning the provision of building refurbishment works at CERN (111)	The contract will cover construction works including interior refurbishment (e.g. partition ... The firms shall have a proven international competence and experience in ... Read More	B	Second quarter 2016	To express an interest please send an e-mail to procurement.service@cern.ch Technically: E. Perez-Duenas Commercially: C. Masoura	First quarter 2018
04-07-2016	Supply	New IT-4245/IT	Supply of servers for physics data processing and infrastructure services (413)	CERN intends to place a contract for the supply of ... Interested firms must be ISO 9001 certified and be Intel Technology ... Read More	D	Refer to MS-4165/IT	To express an interest please send an e-mail to procurement.service@cern.ch Technically: E. Bonfillou Commercially: F. Najeh	Third quarter 2016
			Supply of a numerically controlled milling	CERN intends to place a contract for the supply of			To express an interest please send an e-mail to	

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

Procedures for obtaining offers

- Requirements < 10’000 CHF

  Users may issue enquiries directly provided CERN procurement rules are followed

- Requirements > 10’000 CHF and < 200’000 CHF
  - Price Enquiries issued by Procurement Service
  - Time for bidding 4 weeks; Invite 3 - 5 firms; if > 50’000 CHF sent to Industrial Liaison Officers (ILOs) for information
  - Adjudication based on lowest offer (FCA price) which complies with all requirements, subject to the rules aimed at achieving well balanced industrial return coefficients for the Member States (from 100’000 CHF)

- Requirements > 200’000 CHF

  Market Surveys & Calls for Tenders issued by Procurement Service

Requirements exceeding 200’000 CHF

- Announcement
- List of firms
- Market Survey
- Invitation to Tender
- Clarification Process (procurement.service@cern.ch)
- Opening of bids – Basis of award
- Analysis of lowest bid or Best Value For Money ranking:
  - Price calculation ok?
  - Technical compliance?
  - All requested documents submitted?
  - Country of origin of bid?
  - Alignment rule?
- Contractual negotiation
- Contract

Country of origin

Supply contract: country(ies) in which the goods are manufactured or where the last major modification will take place. If at least 60% of the total amount of the bid comes from poorly balanced Member States, then the whole bid will be treated as that from a bidder in a poorly balanced Member State.

Service contract: country(ies) in which the bidder is established.

The alignment rule

- For supply contracts only, to be awarded on the lowest compliant bid basis and exceeding 100’000 CHF in value

- A bidder offering goods originating from poorly balanced Member States is offered to align his price, under certain conditions, to that of the lowest bidder and thereby be awarded the contract

The following countries are considered to be well-balanced in the period 01.03.2017 until 28.02.2018 for Supply contracts:

Bulgaria, Czech Republic, France, Hungary, Italy, Switzerland

Basis of Award – Supply contracts

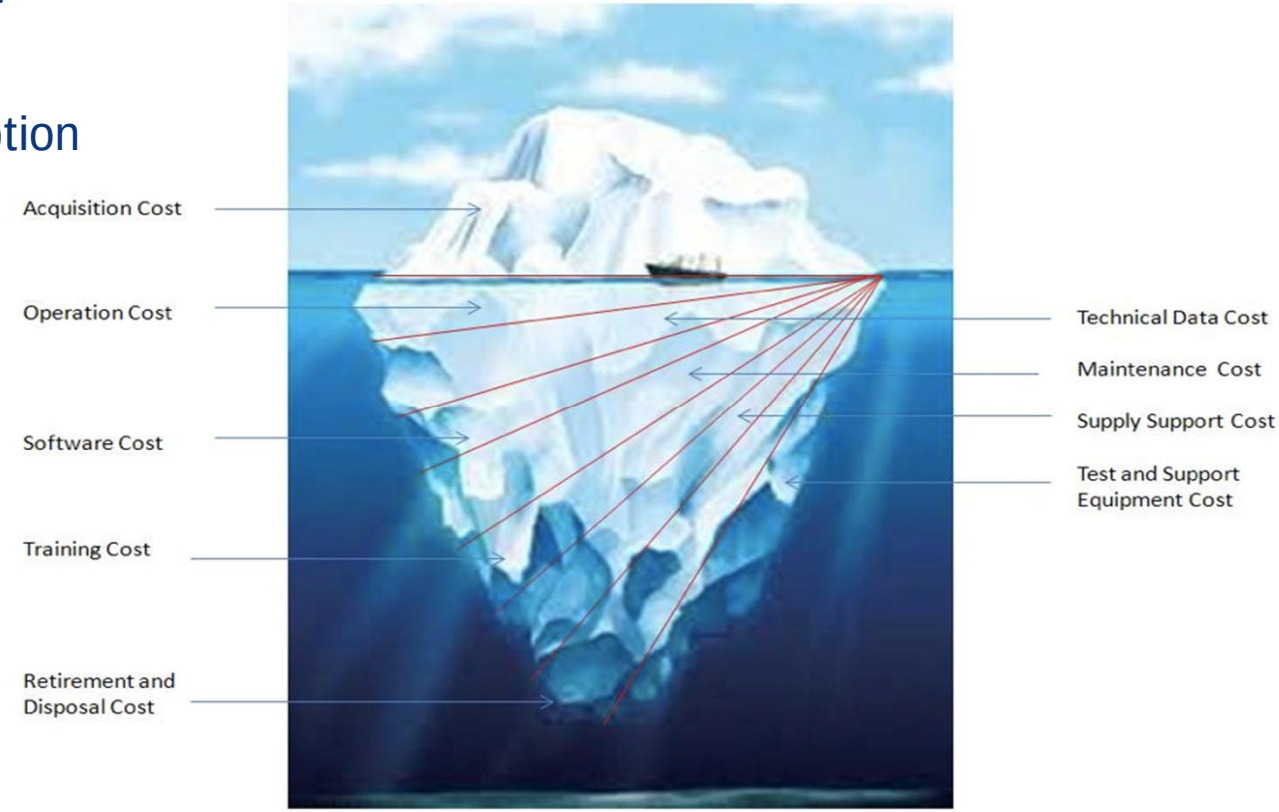
Supply contracts shall be awarded on FCA price, «Lowest compliant bid » basis….

….and….

Lowest cost .....?

Takes into account:

- Initial investment
- Operating costs:
  - Energy consumption
  - Spares
  - Maintenance
  - Training, etc.
- Disposal costs



Basis of Award – Service contracts

Service contracts are awarded on a
«Best Value for Money» basis
to the bidder submitting
the most economically advantageous bid

Best Value For Money

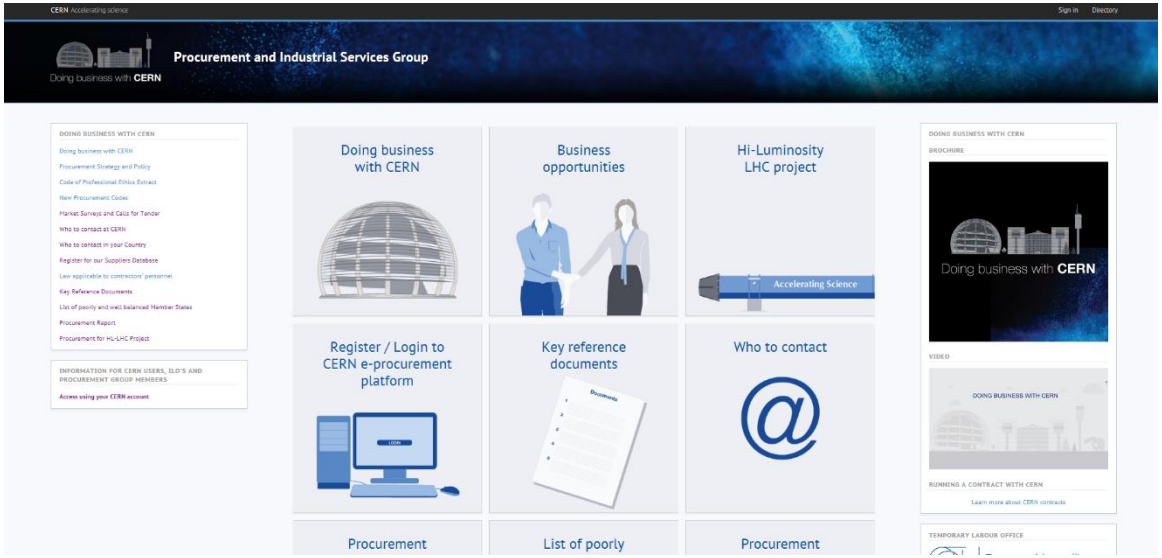
The following criteria and weights will be applied by CERN to evaluate the bids for Service contracts:

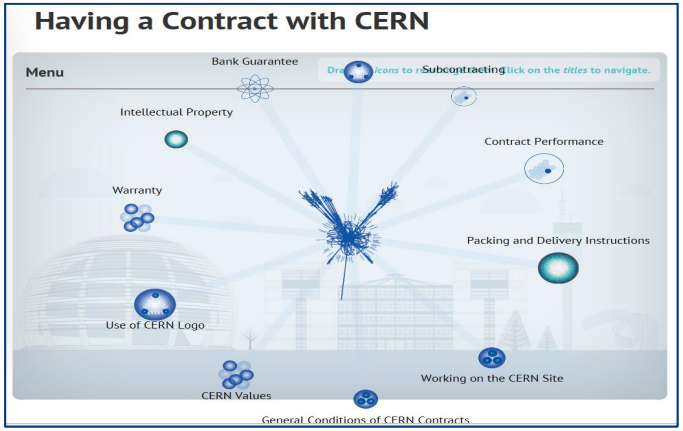
Criterion	Weight
Price (inc. all relevant costs)	**XX**
Quality § Experience of the key personnel § Stability of the personnel § External references § Technical know-how § Technical training § Quality of the bid § Tests § Etc.	**XX**
TOTAL	**100**

Contacts with CERN

Procurement web page

http://procurement.web.cern.ch/





Who to contact at CERN

Procurement Service:

http://procurement.web.cern.ch/en/who-to-contact-at-cern

Procurement.Service@cern.ch

Technical contact by activity

http://procurement.web.cern.ch/who-to-contact-at-cern/technical-contacts

CERN Contact in your country

Industrial liaison Officer (ILO):

http://procurement.web.cern.ch/en/who-to-contact-in-your-country

Italy

Mr Mauro MORANDIN

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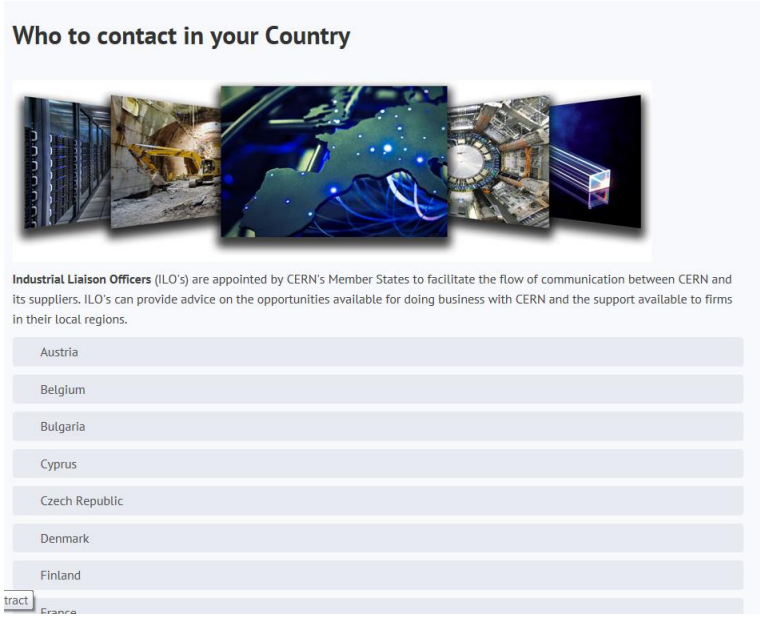
Via F. Marzolo 8 I-35131 PADOVA

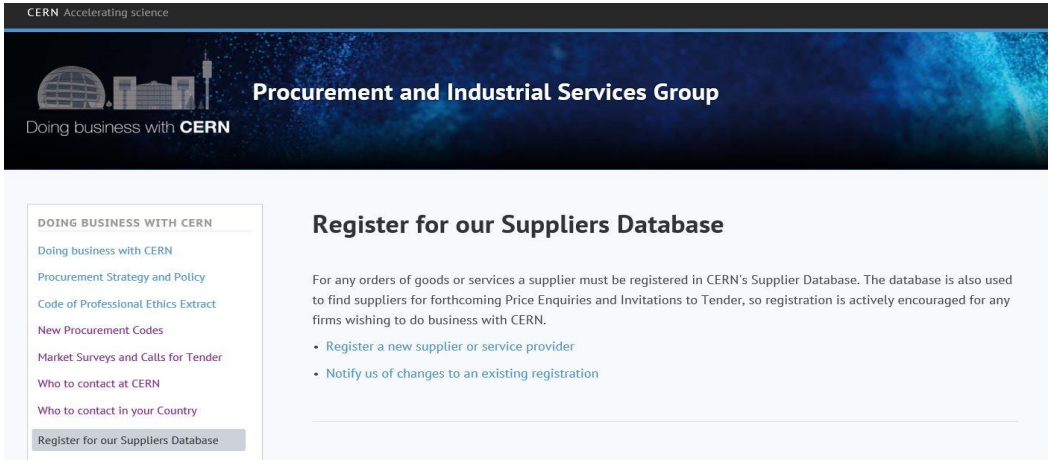
TEL: +39 049 967 7067
EMAIL: ilo@pd.infn.it



Tips & Advices to become an Italian successful bidder and future contractor

Make yourself known and….register in our database

http://procurement.web.cern.ch/en/register-for-our-suppliers-database



Tips & Advices to become an Italian successful bidder and future contractor

- **Contact** your ILO and/or procurement officer
- Take Regular contacts with your technical contacts to learn about future needs
- Do not hesitate to question

Tips & Advices to become an Italian successful bidder and future contractor

Italy is a well balanced member state

- Consider service contract (no alignment rule)
- Consider Price Enquiry < 100 K CHF (no alignment rule)
- Consider PE and IT issued by Experiment (no alignment rule)
- Build you best bid taking into consideration poorly and very poorly balanced member states (partners, suppliers, subcontractors)

Results of contracts with CERN

- 38% had developed new products
- 42% increased international exposure
- 44% improved technological learning
- 52% would have had poorer sales performance without CERN
- 17% opened a new market
- 60% acquired new customers
- all firms had derived great value from CERN as a marketing reference

CERN

supplier

?
Q
&
A
!

Thank you