

# Views of the CERN Council

SNOWMASS

SEATTLE 25th JULY 2022

Eliezer Rabinovici, President of the CERN Council  
Hebrew University, Jerusalem, Israel.



# Churchill laments/observes

- Why, you may take the most gallant sailor, the most intrepid airman or the most audacious soldier, put them at a table together- what do you get? The sum of all fears.

- Why, put together the most enlightened government official, the most creative accelerator engineer, the most inventive high energy experimentalist and the most the brilliant hep theoretical physicist and what you get is the sum of all their fears and scents of all their dreams.

- Welcome to the European Strategy Group for particle physics and SNOWMASS.

# Energy Frontier

A THOUSAND TeV IN THE CENTER OF MASS:

INTRODUCTION TO HIGH ENERGY STORAGE RINGS<sup>†</sup>

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Personal and President of the CERN Council.



How the process is done by the CERN member states via the CERN Council.

## Cern and USA: a little history.



# JOHN KRIDGE-GREG WHITESIDES

## The Place of CERN in U.S. Science and Foreign Policy

The story of the origins of CERN, the European Organization for Nuclear Research (now the European Laboratory for Particle Physics), has been recounted so often that readers can be excused for wondering why it needs retelling.<sup>1</sup> However, most of the work done to date by myself and others, including some of the physicists engaged in launching the project, has concentrated almost exclusively on developments in Europe from the late 1940s onward. Far less attention has been paid to the United States' role in the process and to how the political configuration of the intergovernmental laboratory dovetailed with the United States' scientific and foreign policy in the region, notably the overall goals of the Marshall Plan. This chapter aims to fill that gap in our

In hindsight, *Atoms for Peace* illustrated the complexities of atomic energy in American foreign relations. The political scientist David Dickson considered AFP “successful” because “it created an institutional framework within which the United States was able to reap a maximum economic and political advantage from its position of world leadership in nuclear science and technology.”<sup>65</sup> From his perspective, the conference in Geneva was “a science fair, where the rich nations competed against each other to sell their technological wares to the poor.”<sup>66</sup> Historian John Krige highlighted the relationship between scientific “internationalism” and “intelligence,” observing, “[Scientific internationalism] pushed back the frontiers of security restrictions and mutual distrust, enabling scientists to build together a shared body of public knowledge. [Scientific intelligence] exploited that trust to learn what others were doing, to establish the limits of what they could speak about freely, and to assess the dangers that may lurk behind what they left unsaid.”<sup>67</sup> Finally, historians Richard Hewlett and Jack Holl add another caveat: “The problem was that international promotion and control of atomic energy were contradictory; the success of the one tended to hurt the cause of the

scientists discussed the idea of a European research reactor after World War II: The Italian physicist Edoardo Amaldi discussed a joint reactor with his British partner in 1946; French physicist Louis de Broglie made a similar proposal a few years later.<sup>70</sup> Finally, the American physicist Isidor Rabi proposed a joint research reactor at the UNESCO General Assembly in 1950. While Rabi hoped to “preserve the international fellowship of science” and guarantee that American physicists had “somebody to talk to,” European nations had their own reasons for participating.<sup>71</sup>

By the mid-1950s, West Europeans agreed on a few common assumptions: first, resources such as coal and steel should be shared and no single state had the funds for a research reactor; second, the proposed reactor would not intrude on national military programs and would guarantee access to cutting-edge research; and third, the reactor would help support the revitalization of European physics.<sup>72</sup> Additionally, the facility would be constructed on neutral European soil – Switzerland – to avoid Cold War geopolitics. It was an excellent opportunity: by 1953, twelve governments had contributed funds.<sup>73</sup>

American anti-communism influenced early CERN policies. Early



CERN

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# JOHN KRIDGE-GREG WHITESIDES

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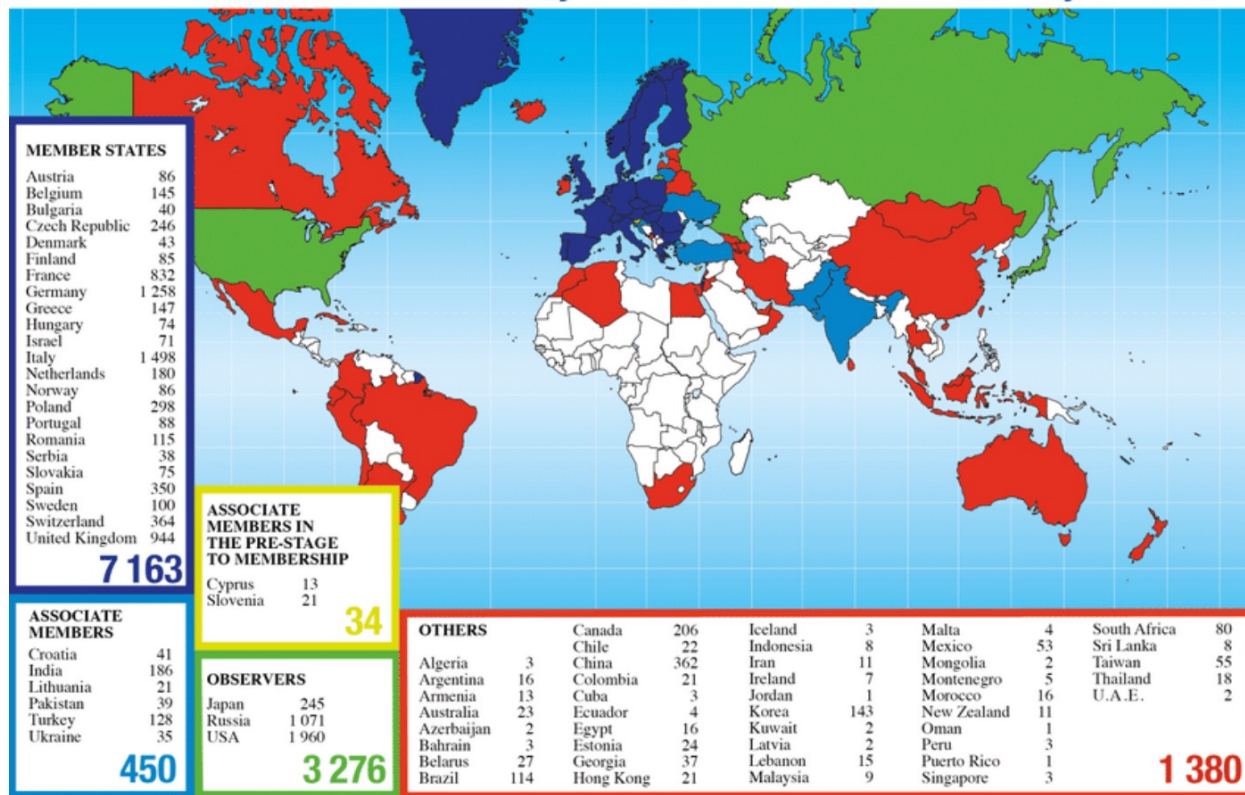
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## Distribution of All CERN Users by Location of Institute on 27 January 2020



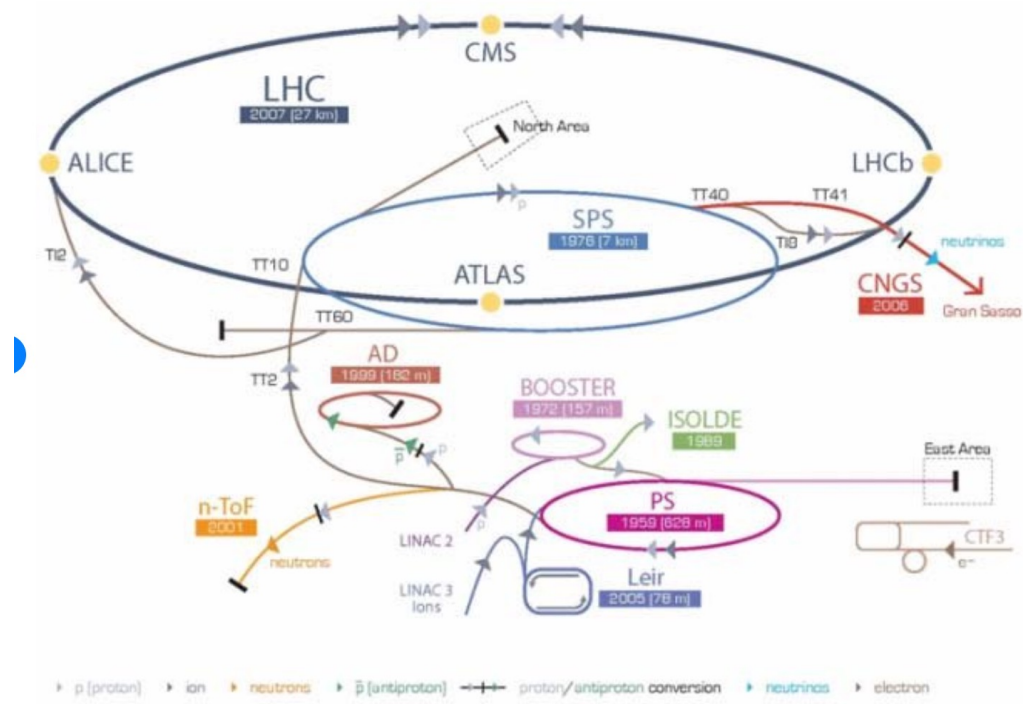
Distribution of CERN [10] users by location of their institutes. Users are not necessarily originating from the country of the university or laboratory they are affiliated with. Less than 5% of CERN users are associated with a developing nation.

## EXPERIMENTAL HIGH ENERGY PHYSICS RESEARCH.

- NATIONAL
  - INTERNATIONAL
  - GLOBAL
- 
- WHAT DOES CERN HAVE?



# CERN – STABILITY-KNOWLEDGE



CERN accelerator complex.

# *CERN- STABILITY- MS FUNDING*

OVER 25 YEARS 1998-2022

OVER 29 BILLION CHFS. (RINGS A BELL?)

YEAR BY YEAR –FIXED AND INDEXED BUDGET. 100% PAID.

WILLING TO ASSUME LEADERSHIP-MONEY ON THE TABLE.

....ISR..SPS, Ppbar, LEP, LHC- 13.6 TEV July 5th. HL-LHC

NEUTRAL CURRENTS-NEUTRINO(USA BOTH WAYS)

-W- Z- H –PENTAQUARKS

AMAZING PROGRESS IN ACCELERATOR TECHNOLOGY.



# CERN's governance organs

CERN is governed by **two main organs** (Article IV, Convention)

- the **Council**
  - supreme decision-making authority
  - advised by specialised subordinate bodies, the Scientific Policy Committee, the Finance Committee, the Pension Fund Governing Board, the Audit Committee
- the **Director-General**, who is the Chief Executive Officer and legal representative of the Organization



# Composition of the Council

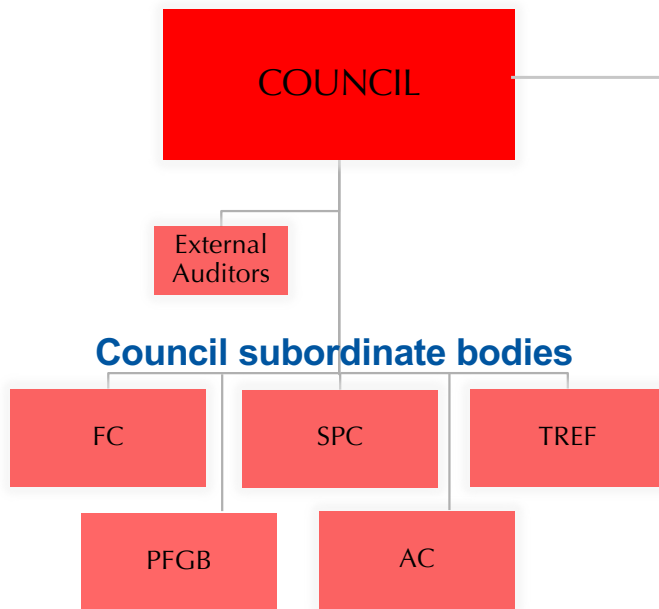
**23 Member States** : Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Spain, Sweden, Switzerland, United Kingdom; **TWO DELEGATES TO COUNCIL**

- **3 Associate Members in the pre-stage to Membership:** Cyprus, Slovenia, Estonia
- **7 Associate Member States:** Croatia, India, Latvia, Lithuania, Pakistan, Turkey, Ukraine
- **4 Observers:** Japan, USA, EU, UNESCO (Observer status of Russian Federation and JINR suspended in March 2022)

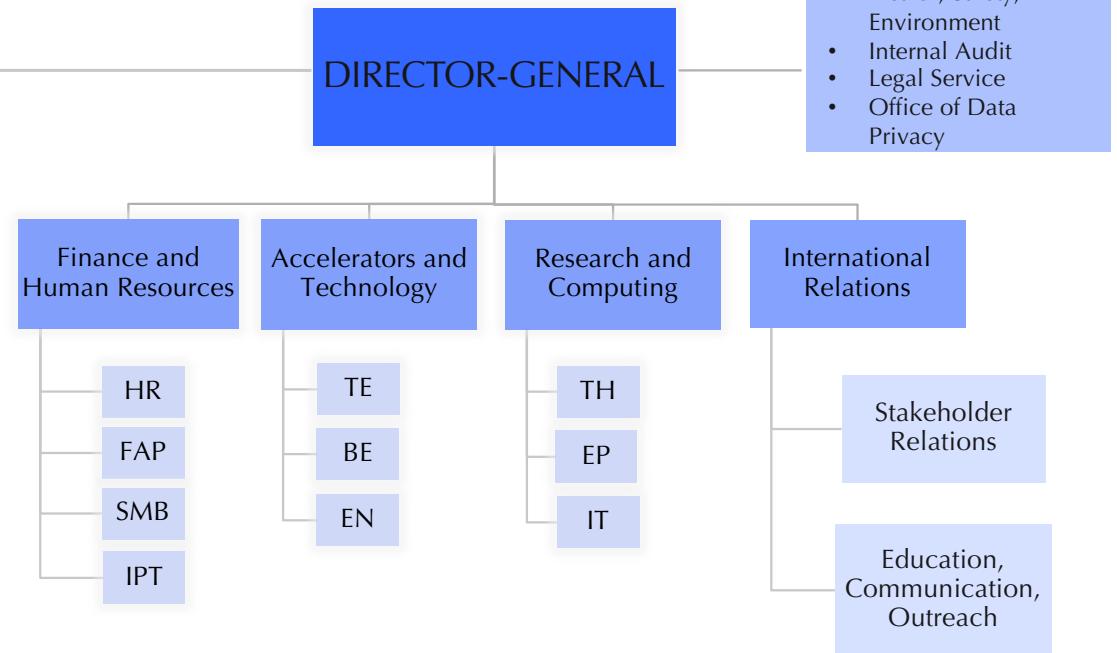


# Organigram

## Supreme Decision-Making Authority



## Management structure



- DG services**
- Council Support
  - Health, Safety, Environment
  - Internal Audit
  - Legal Service
  - Office of Data Privacy

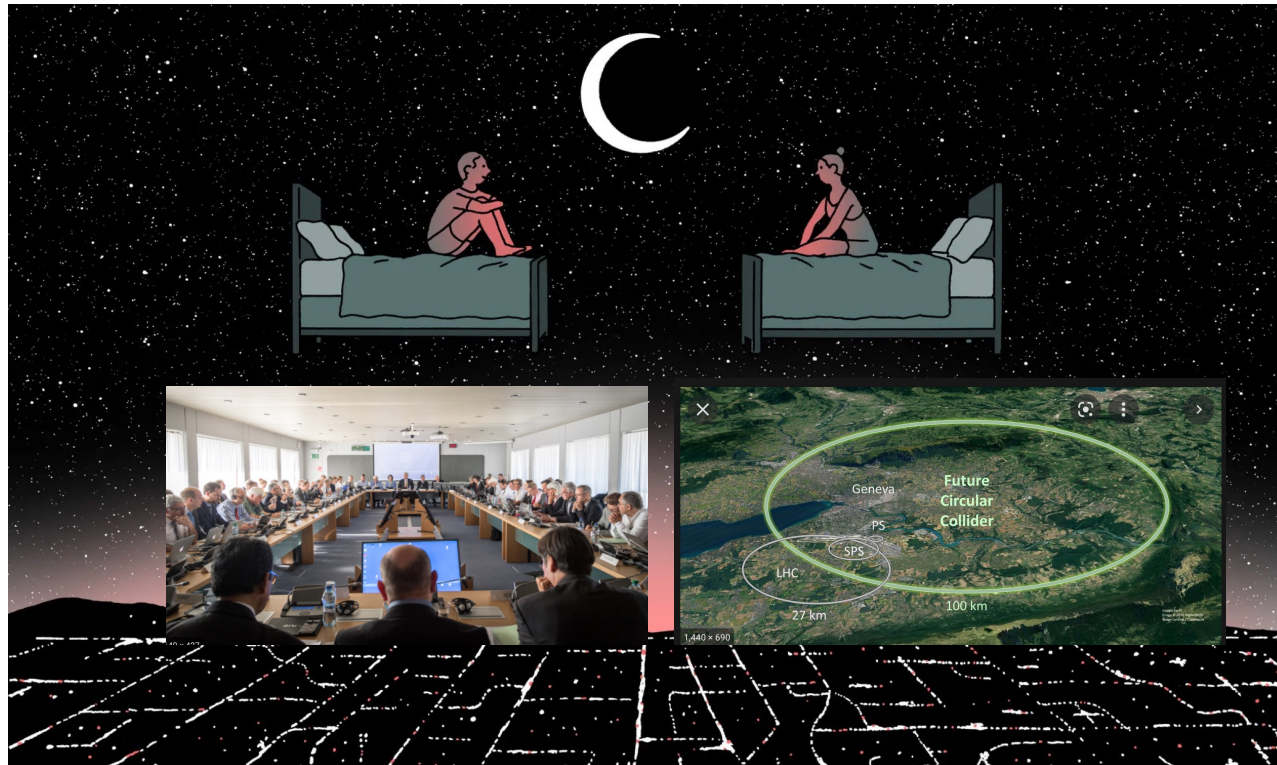


# Genesis of the FCC Feasibility Study

## European Strategy for Particle Physics(ESGPP)

- First adopted by the Council in 2006 – Non Brainer - bottom up Orsay-Zeuthen- Lisbon
- Adopted in 2013 Bottom Up Krakow- Erice- CERN
- HL-LHC , Future vision (fcc ilc clic and others)
- Updated 2020 –BOTTOM-UP – POINT-LINE-CIRCLE
- Granada-Bad Honnef -CERN(Budapest) HL LHC the rest Complex
- The update of the ESGPP by the Council in June 2020 called for:  
“a technical and financial feasibility of a future hadron collider at CERN with a centre-of-mass energy of at least 100 TeV and with an electron-positron Higgs and electroweak factory as a possible first stage. Such a feasibility study of the colliders and related infrastructure should be established as a global endeavour and be completed on the timescale of the next Strategy update”







# COMMON: MAINTAIN A LEADERSHIP VIA A VISION

- WHAT VISION? CONSIDERATIONS AND CONCERNS
  - Scientific (Higgs and?)
  - Technological (HL and High Field Magnets)
  - Construction: Geology , Environment
  - Financial
  - ECRs?
  - Politics and overlap issue.
- CERN IS THE LEADER. THE FUTURE REQUIRES SCIENTIFIC AND TECHNOLOGICAL VISION. EXCELLENCE IS EXTREMELY HARD TO ACHIEVE –SO EASY TO LOOSE.

# Collaboration or Competition

Competition within a Collaboration

Collabotition- Comlaboration.

International- Global- Transatlantic?

Governance Challenge- also an opportunity on a LARGER  
SCALE, ONCE AGAIN A MODEL!

CCC



# THANK YOU FOR YOUR ATTENTION

