Ways to industry participation in CLIC

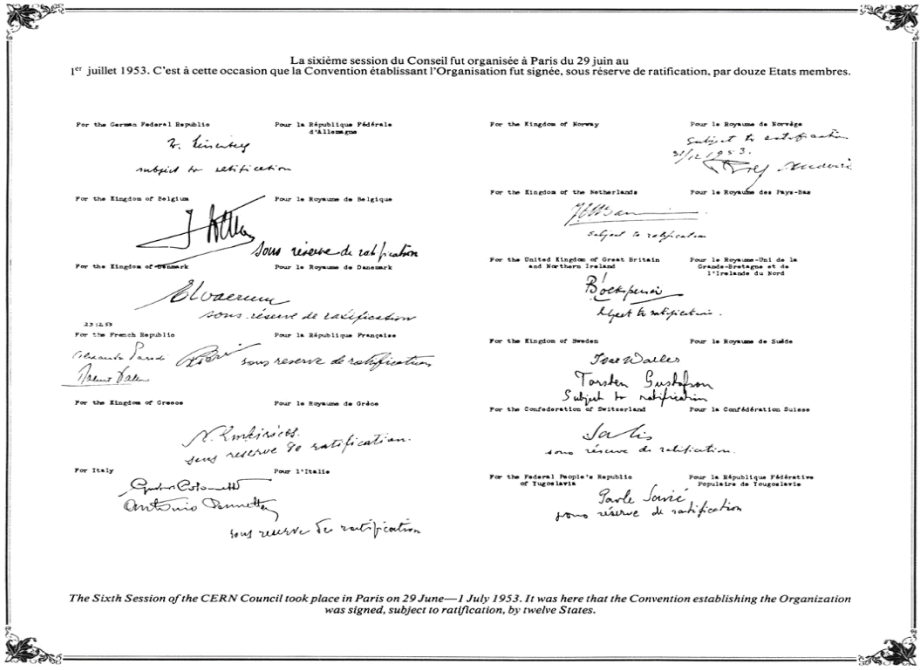
24th October, 2017

matti.tiirakari@cern.ch


CERN

CERN
European Organization for Nuclear Research

- Founded in 1954 by 12 countries
- Now: 22 member states, 4 associate MS (India, Pakistan, Turkey and Ukraine) + 2 observers EU and UNESCO)
- Serbia, Cyprus and Slovenia are in pre-stage to membership
- More than 12000 users from all over the world



La sixième session du Conseil fut organisée à Paris du 29 juin au 1er juillet 1953. C'est à cette occasion que la Convention établissant l'Organisation fut signée, sous réserve de ratification, par douze Etats membres.

For the German Federal Republic — Pour la République Fédérale d'Allemagne
subject to ratification

For the Kingdom of Belgium — Pour le Royaume de Belgique
sous réserve de ratification

For the Kingdom of Denmark — Pour le Royaume de Danemark
sous réserve de ratification

For the French Republic — Pour la République Française
sous réserve de ratification

For the Kingdom of Greece — Pour le Royaume de Grèce
sous réserve de ratification.

For Italy — Pour l'Italie
sous réserve de ratification

For the Kingdom of Norway — Pour le Royaume de Norvège
Subject to ratification
2/12/1953.

For the Kingdom of the Netherlands — Pour le Royaume des Pays-Bas
subject to ratification

For the United Kingdom of Great Britain and Northern Ireland — Pour le Royaume-Uni de la Grande-Bretagne et de l'Irlande du Nord
Subject to ratification.

For the Kingdom of Sweden — Pour le Royaume de Suède
Subject to ratification

For the Confederation of Switzerland — Pour la Confédération Suisse
sous réserve de ratification.

For the Federal People's Republic of Yugoslavia — Pour la République Fédérative Populaire de Yougoslavie
sous réserve de ratification

The Sixth Session of the CERN Council took place in Paris on 29 June—1 July 1953. It was here that the Convention establishing the Organization was signed, subject to ratification, by twelve States.

1954: Convention establishing the Organization - original signatures

The 22 member states

CERN - Procurement

- CERN, the European Organization for Nuclear Research is an intergovernmental organization with 21 Member States, which straddles the French-Swiss border in Geneva (est. 1954)
- It uses its own procurement rules and strategy to procure supplies and services
- Tender process is selective and do not follow an open form (unlike tenders under EU-procurement or UN-organizations rules)

MS and industry return

- A balanced industrial return for the CERN Member States within the CERN procurement rules in target
- Tenders drafted in objective ways to guarantee fair competition
- Contracts adjudication based on either lowest bid or best value for money

Market Surveys and Call for Tenders

- Information for forthcoming Market Surveys and Calls for Tenders via ILO´s (Industrial Liaison Officers)
- Two different timelines from around 3 months up to 8-10 …months acc. to cost estimations:
  from 200k CHF up to 750k

  from 750k onwards subject to CERN

  Finance- and Committee of Council approvals

LHC – a global project with industry collaboration

- Lessons learned from the LHC-construction, and advanced technology driven project for a large scientific instrument
- 27 km circumference
- High-field superconducting magnets (three mains suppliers)
- Superfluid helium cryogenics system

Main cost LHC-drivers

- Magnetic elements 50%
- Civil engineering 16
- Cryo-equipment 15
- Tech. services and infra 11
- Accelerator components 6
- Transfer lines, beam injectors and dump 2

TOTAL material expenditure 3,8BCHF

…months, years almost decades

- First conceptual studies 1984…
- First magnet models 1988
- Start up R&D program 1990
- CERN council approval 1994
- Industry – series production 1996 - 1999
- Main procurement contracts 1998 – 2001
- Start installation in tunnel 2003…
- Test 2007, Beam on 2008, operation 2009…

Substantial Volumes

- 1 170 prices inquiries
- 115 700 purchase orders
- Over 1000 contracts
- Over 6000 direct suppliers/contractors

…with experimental learning curves (especially for the superconducting magnet manufacturing)

on the field a special regulatory framework of CERN (VAT and duty exemptions within EU and non EU (Swiss) legal frames

LHC and its 4 experiments

- 80 % funding via collaborations (in-kind and cash)
- 20 % CERN cash
- K-contracts (collaboration – MoUs – agreements
- Institutions own procurements also via CERN procurement services
- Continuing concept for operation and upgrade phases

CLIC-possibilities

- Collaborations agreements with institutes and companies (directly and mixed possibilites)
- CERN K-contract model
- Pre-In-kinds
- Prototyping, studies and innovation ways
- Student opportunities (PhDs, Fellowship programs apprentiships under CERN umbrella

Key Incredients in a project success

- Facility is a priority of the science community
- Strong funding commitments and host role(s)
- Organisation populated with critical experience
- Realistic goals
- Experience over ´hope´
- Openness and transparency
- Collective ownership of problems and solutions
- Success requires energy and enthusiasm