

# ECFA Activities

CHIPP Plenary Meeting

Swiss Physical Society Annual Meeting, EPFL, Lausanne, 28 August 2018

*Lenny Rivkin, EPFL & PSI*

## The ECFA Chair

Jorgen D'Hondt  
Free University Brussels  
(VUB)



The election took place at the RECFA meeting in October 2017

# ApPec-ECFA working group on Detector R&D

A committee to review detector development efforts for future projects

- The mandate of the Detector R&D panel (ECFA/16/298, June 2016), some extracts:
- **The ECFA Detector Panel is aimed at providing advice on detector development efforts for projects in their preliminary and preparatory phases.** It receives R&D proposals on request by research communities, laboratories, institutions, individual authors and bodies such as science funding agencies. It appoints experts charged to evaluate them and make recommendations.
- **It helps to create coherence of global detector R&D efforts** by encouraging synergies between different activities and advising funding agencies on request.
- **It is primarily concerned with large projects**, related to accelerator and non-accelerator experiments in the fields of particle and astroparticle physics, involving several institutions and requiring significant resources. It is in particular intended for the review of projects that do not undergo an existing review process elsewhere.
- **The Panel has only a reviewing and advisory role.** It does not assume any coordination of the R&D programs, nor does it take part in any science policy decisions.

## ECFA Meetings 2018

### Plenary ECFA

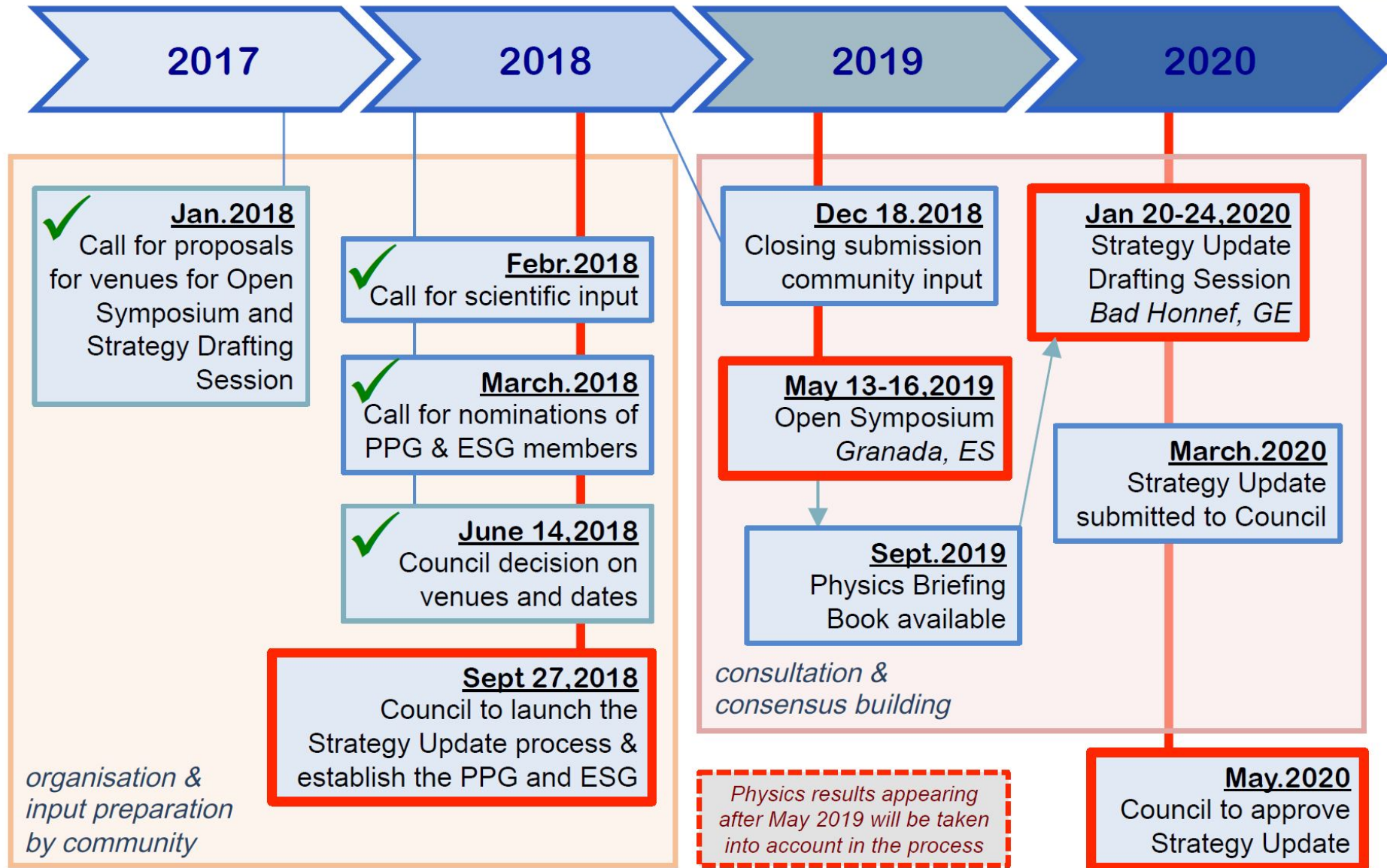
- ALBA (Barcelona), July 19-20, 2018 (both RECFA and PECFA) ✓
- **CERN, 15-16 November 2018**

### Restricted ECFA

- Romania (Bucharest), March 23-24, 2018
- Austria (Vienna), April 6-7, 2018
- Slovakia (Bratislava), May 18-19, 2018
- The Netherlands (Amsterdam), October 19-20, 2018

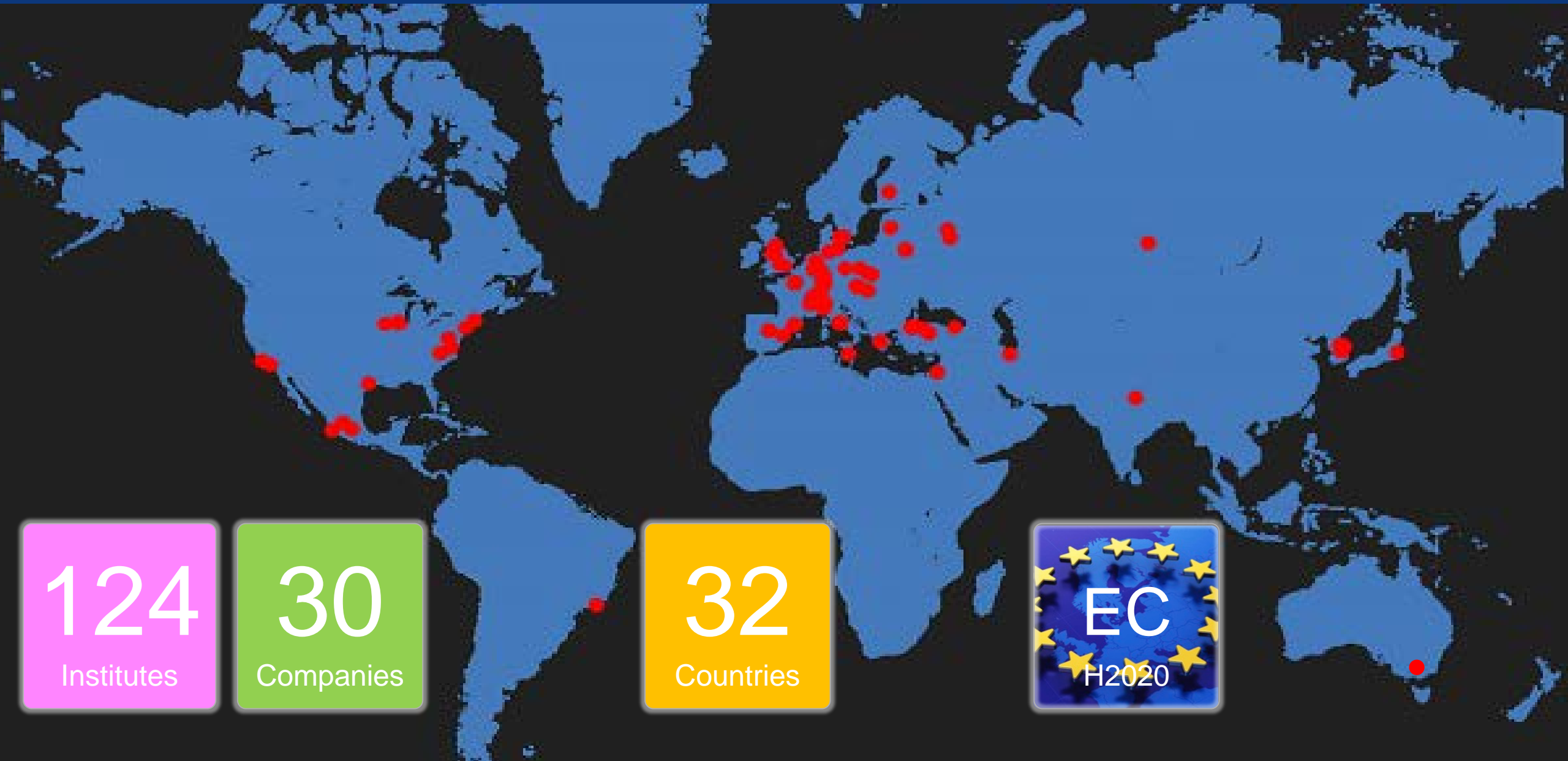


# European Particle Physics Strategy *Update*





# Collaboration & Industry Relations



124

Institutes

30

Companies

32

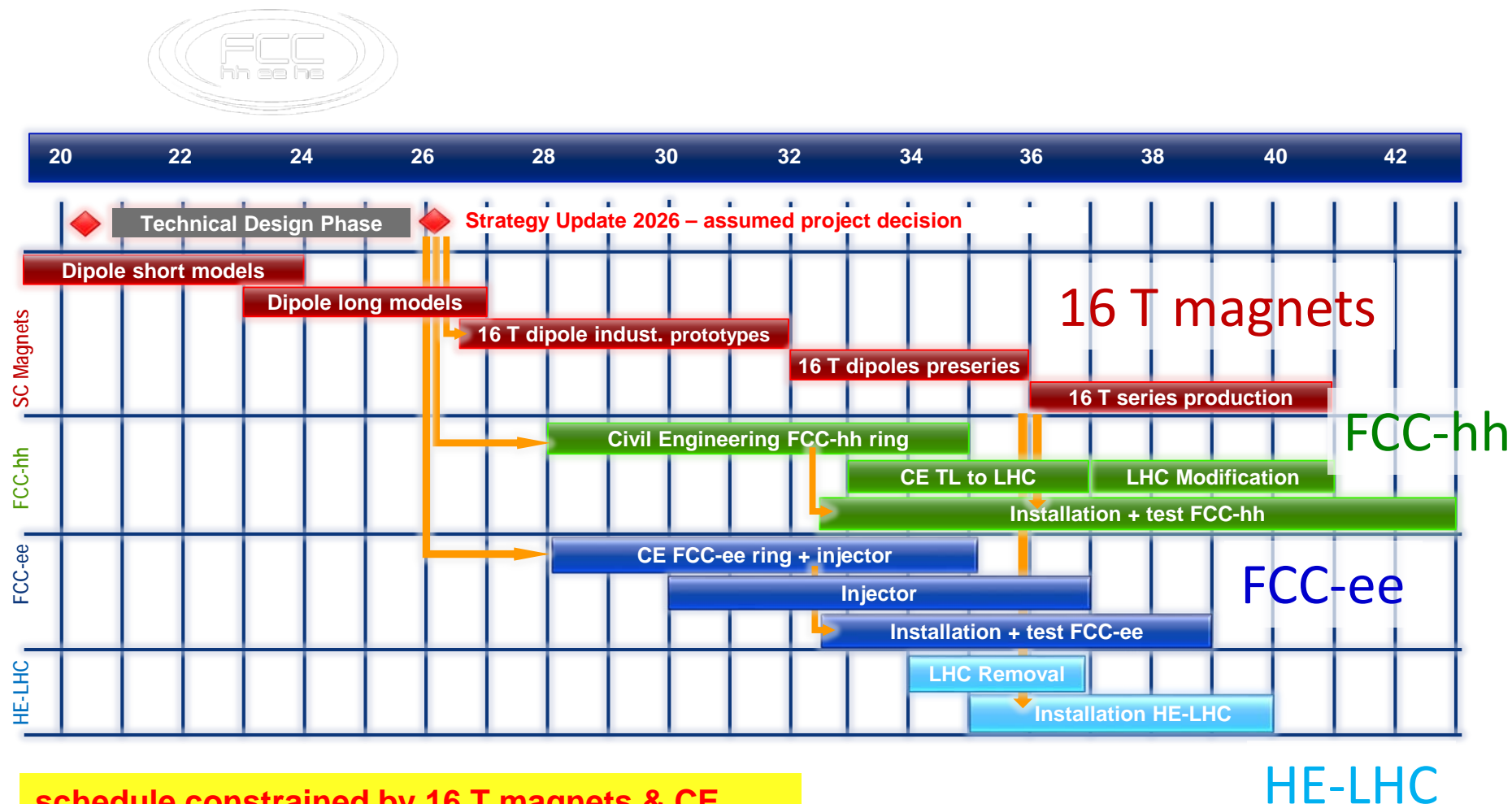
Countries



# FCC CDR Presentation Outreach event

PARIS

29 / 30 January, 2019



**schedule constrained by 16 T magnets & CE**

→ earliest possible physics starting dates

- FCC-hh: 2043
- FCC-ee: 2039
- HE-LHC: 2040 (with HL-LHC stop in 2034)





# HE-LHC design goals & basic choices

## physics goals:

- 2x LHC collision energy with FCC-hh magnet technology
- c.m. energy = 27 TeV  $\sim$  14 TeV x 16 T/8.33T
- target luminosity  $\geq 10 \text{ ab}^{-1}$  over 20 years

## key technologies:

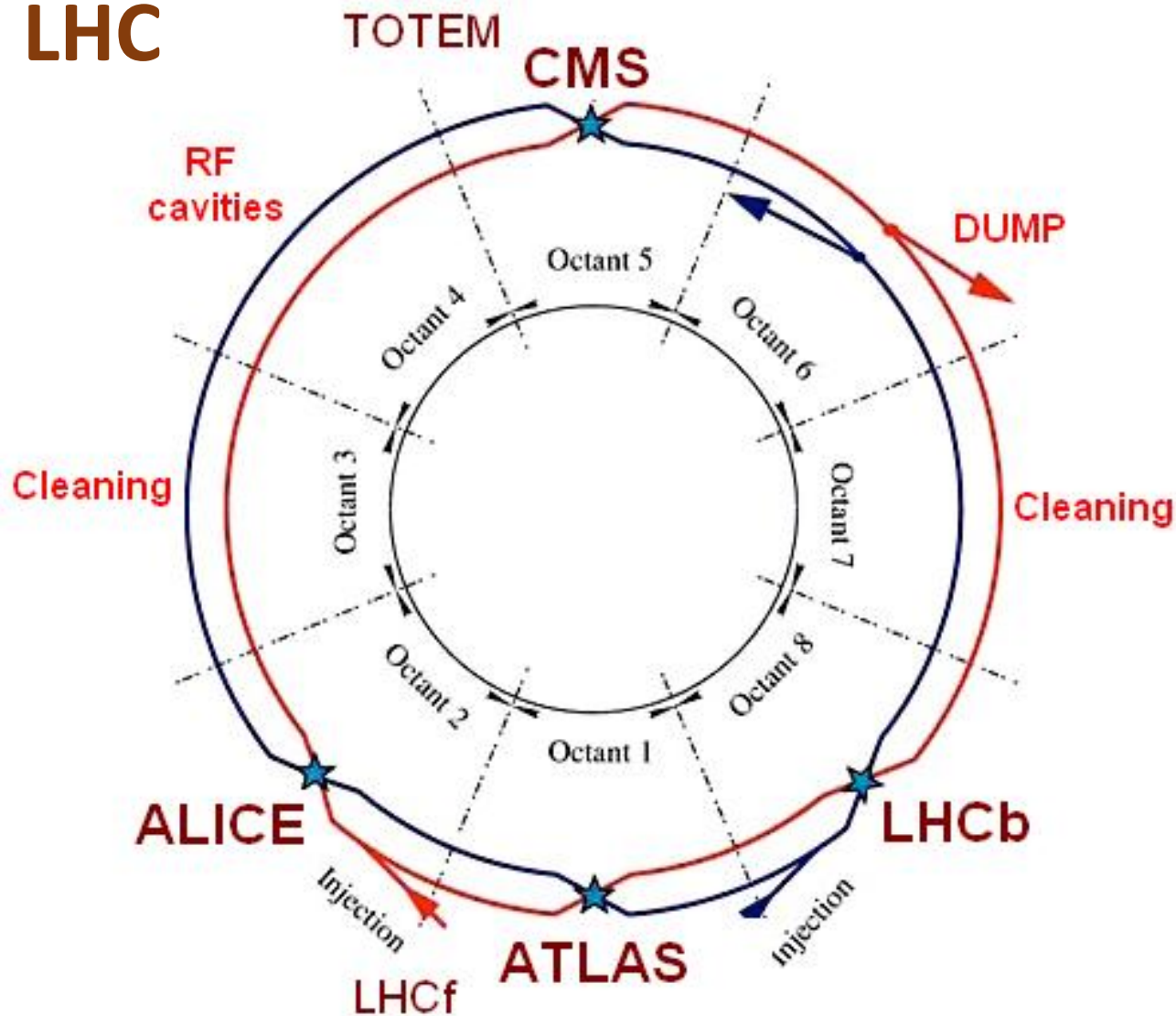
- FCC-hh magnets & FCC-hh vacuum system
- HL-LHC crab cavities & long-range wire compensation

## beam:

- HL-LHC/LIU parameters (25 ns baseline)

# HE-LHC layout like LHC

**LHC**



## 8 interaction regions (IRs)

2 high-luminosity experiments in IR1 & 5

2 secondary experiments (perhaps including one e-p collision point) in IRs 2 & 8, shared with injection

IR3: momentum collimation

IR4: radiofrequency (RF) and diagnostics

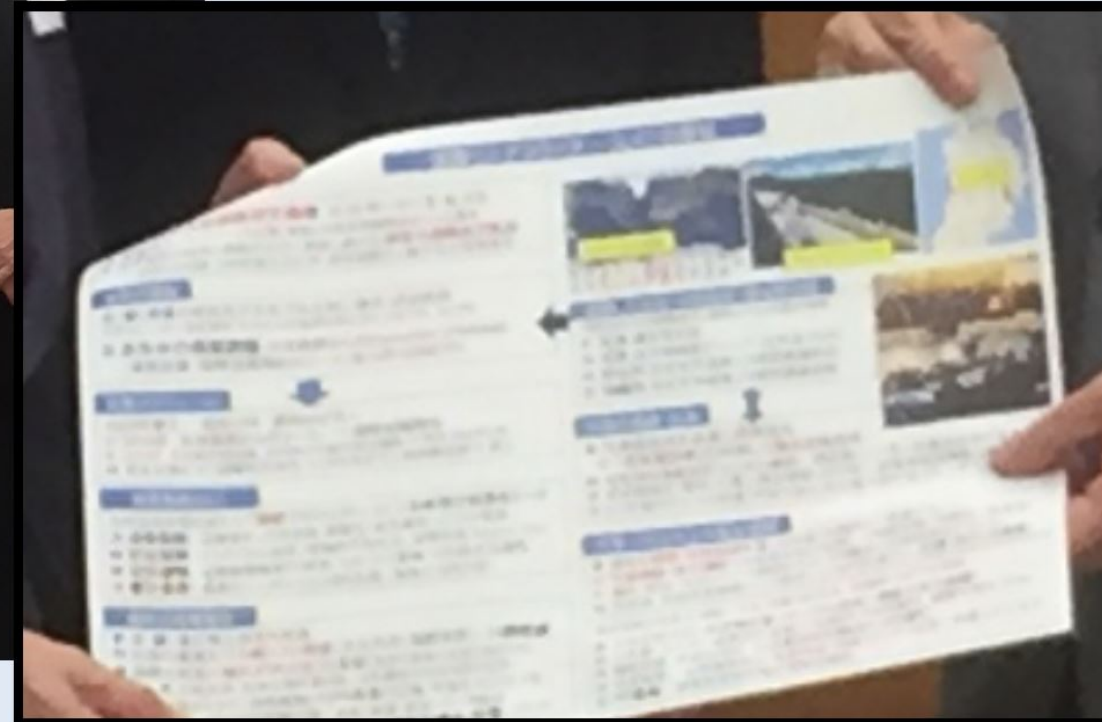
IR6: beam extraction

IR7: betatron collimation

# The ILC in Japan?

***On the political front in Japan (July 5, meeting with PM Abe)***

Satoru Yamashita, Uni. of Tokyo



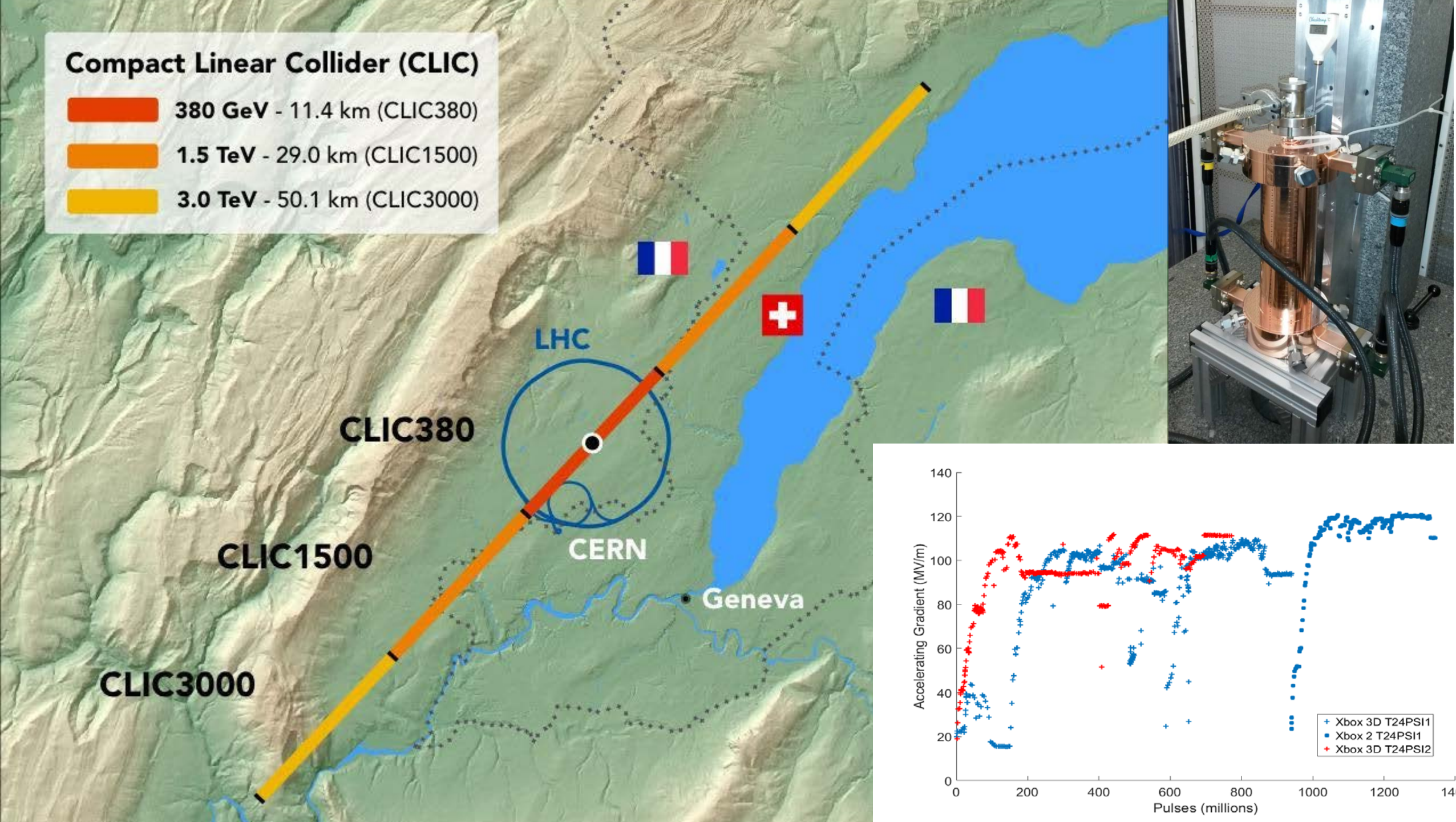


## Compact Linear Collider (CLIC)

380 GeV - 11.4 km (CLIC380)

1.5 TeV - 29.0 km (CLIC1500)

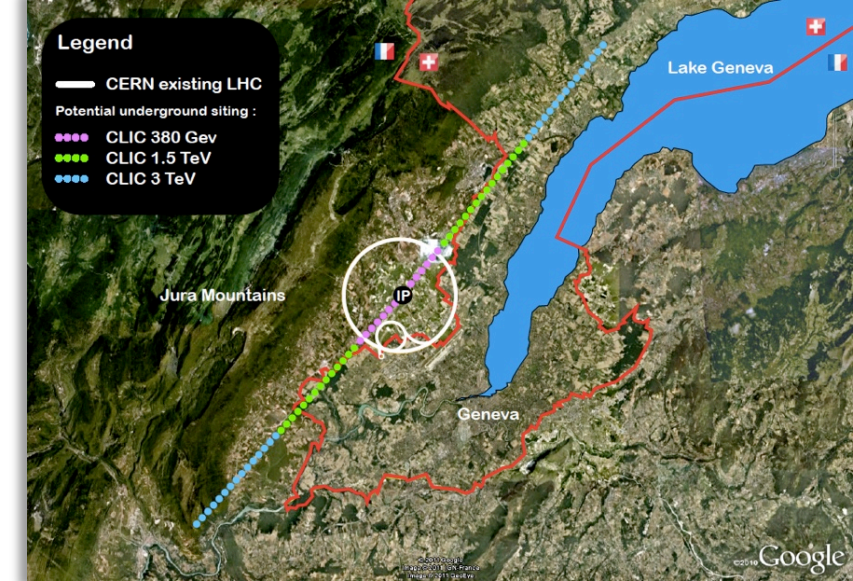
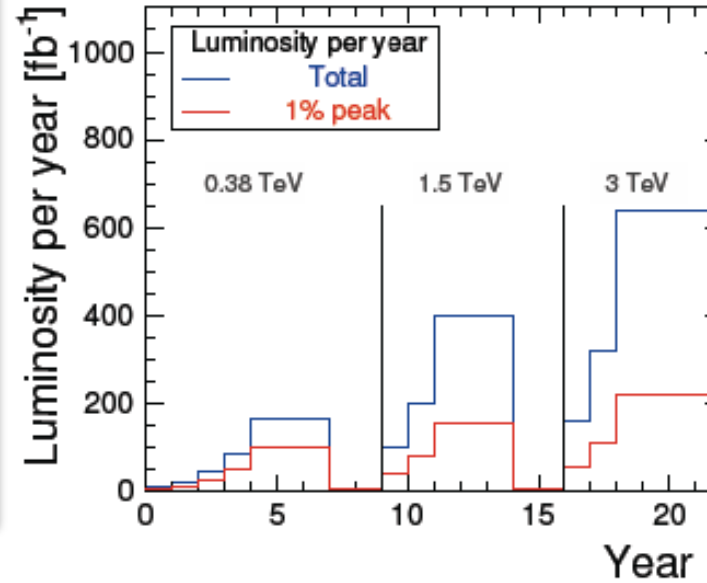
3.0 TeV - 50.1 km (CLIC3000)





# CLIC

Accelerator collaboration with ~50 institutes  
Detector collaboration with ~29 institutes



Under study is also klystron based machine for initial stage

Parameter	Unit	380 GeV	3 TeV
Centre-of-mass energy	TeV	0.38	3
Total luminosity	$10^{34}\text{cm}^{-2}\text{s}^{-1}$	1.5	5.9
Luminosity above 99% of $\nu_s$	$10^{34}\text{cm}^{-2}\text{s}^{-1}$	0.9	2.0
Repetition frequency	Hz	50	50
Number of bunches per train		352	312
Bunch separation	ns	0.5	0.5
Acceleration gradient	MV/m	72	100
Site length	km	11	50

