

ECFA, European Committee for Future Accelerators

From the “Herten paper” on strategy implementation:

The role of ECFA is to actively facilitate future developments in accelerator-based HEP in Europe and the integration of European HEP into the international landscape. Working groups set up or endorsed by ECFA explore future accelerator-based HEP projects. In this context ECFA builds on successful work in the past where it has been instrumental in preparing the physics cases for major projects like LEP, HERA and the LHC. ECFA’s principal role is to act as an incubator for new ideas. It is currently engaged in this role in the context of the ILC, CLIC and future neutrino facilities.

restricted ECFA:

- one delegate per member state (20), observer states (2) and directors of CERN, DESY, Gran Sasso and Frascati
- country visits (3 per year) to evaluate particle physics activities

plenary ECFA

- several delegates per country
- meets twice per year, to hear status reports of Labs and openly discuss about future projects.

Recent country visits:

- Czech Republic, March 2007
- UK, May 2007
- Germany, October 2007

Plenary session at HEP-EPS07 conference in Manchester with good attendance

These sessions are planned to take place at all future EPS conferences (biannually)

Some highlights from recent discussions in ECFA:

Progress of the GDE for a future linear collider

ESGARD: Coordination of request to the EU FP6/FP7 for R&D for accelerator infrastructure (-> slides from Roy Aleksan)

EUDET: successful R&D for detectors for linear colliders, (CH: Martin Pohl et al., University of Geneva)

New effort for common FP7 request for detector R&D for sLHC, ILC/CLIC, neutrino, learn from EUDET "vertical coordinators" from the projects.
"horizontal coordinator" for national communities:
Switzerland: Martin Pohl





Q: Why to bother about (small) EU R&D money?

A: It is a strategic option, for HEP visibility, to learn to deal with the EU and to demonstrate our ability to coordinate common efforts

Q: Why common requests?

A: To have EU overhead only on one place. To be able to define the topics ourselves.

Summary Accelerator R&D projects co-financed by the EC in FP6

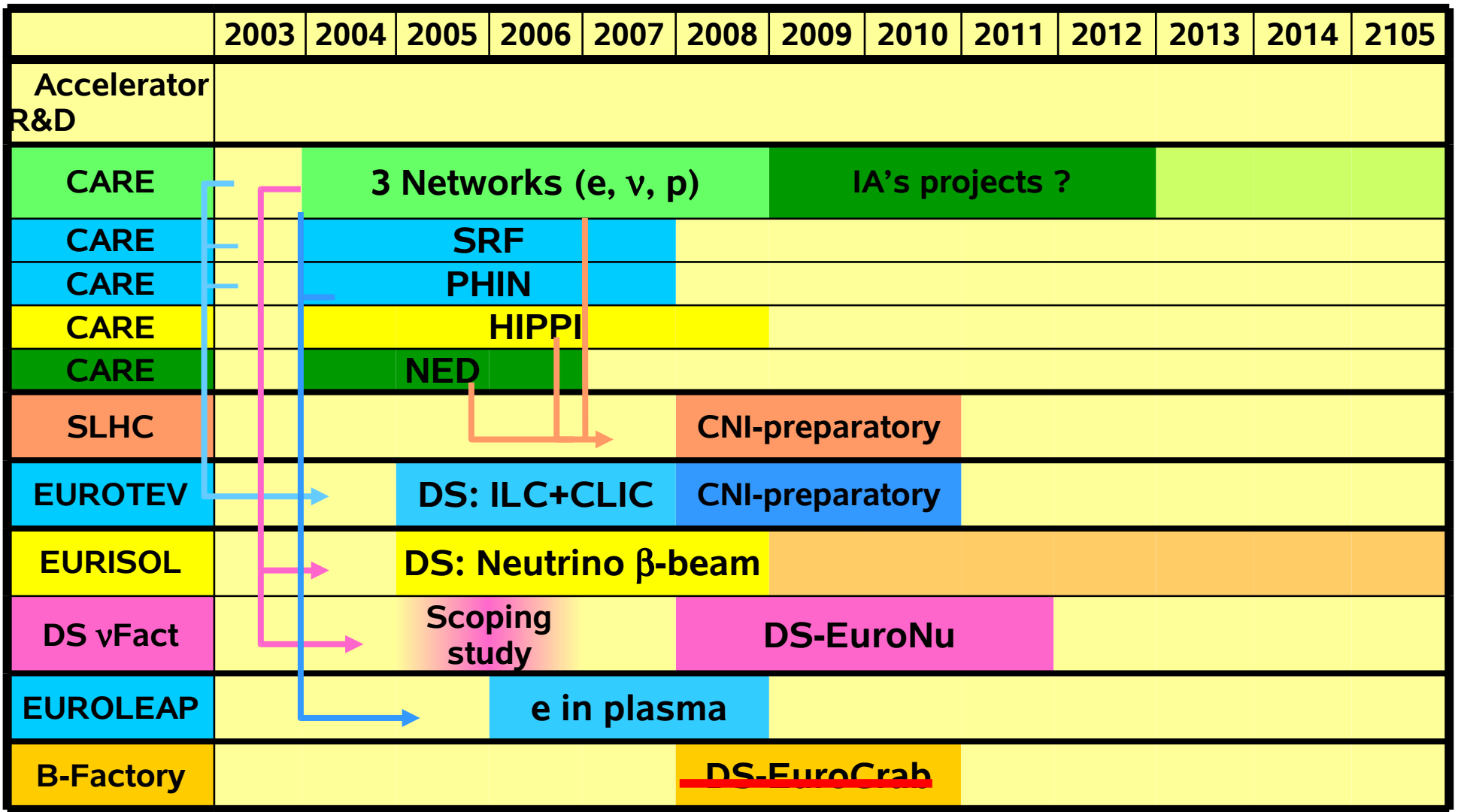
Project	Type	Beam Type	Start date	Duration Years	Total Cost	EU contribution
	I3	All	1/1/04	5	55 M€	15.2 M€
	DS	e ⁺ ,e ⁻ (LC)	1/1/05	3	29 M€	9 M€
	DS	Ion, p (v β-beam)	1/1/05	4	33 M€ (3.3 M€)	9.16 M€ (1 M€)
	NEST	e Plasma acceleration	1/9/06	3	4.1 M€	2 M€
Total					>121 M€	35.4 M€

Summary of Accelerator R&D projects proposed in FP7 1st call

Accelerator R&D proposals submitted by our community on May 2nd, 2007

- 2 CNI-preparatory Phase (SLHC and ILC)
- 2 DS (EuroNu and EUROCRAB)

Project	Type	Beam Type	Start date	Duration Years	Total Cost	EC contribution
SLHC Preparatory	CNI	proton	1/1/08	3	11.3 M€	5.2 M€ (~80%)
ILC-HiGrad Preparatory	CNI	e ⁺ ,e ⁻ (LC)	1/1/08	3	10 M€	5.0 M€ (~70%)
EuroNu	DS	neutrino	1/1/08	4	14.4 M€	4.0 M€ (~83%)
EuroCRAB	DS	e⁺,e⁻ (also p)	1/1/08	3	6.44 M€	0 M€
Total					>42 M€	14.2 M€ 65%



Some highlights from recent discussions in ECFA (cont.):

Close down of **HERA** accelerator on June 30, 2007.

- successful data taking for 15 years, learned a lot about
 - QCD in a huge kinematical region,
incl. applications to LHC background calc.,
 - EW physics (e.g. polarisation / charge dependant Xsect.)
 - BSM searches.
- still a lot to be analysed (most published papers deal with
1/5 of the statistics only, so far).
- DESY physicists start to move to other projects, presently
about 1/3 HERA, LHC and LC detector R&D, each.

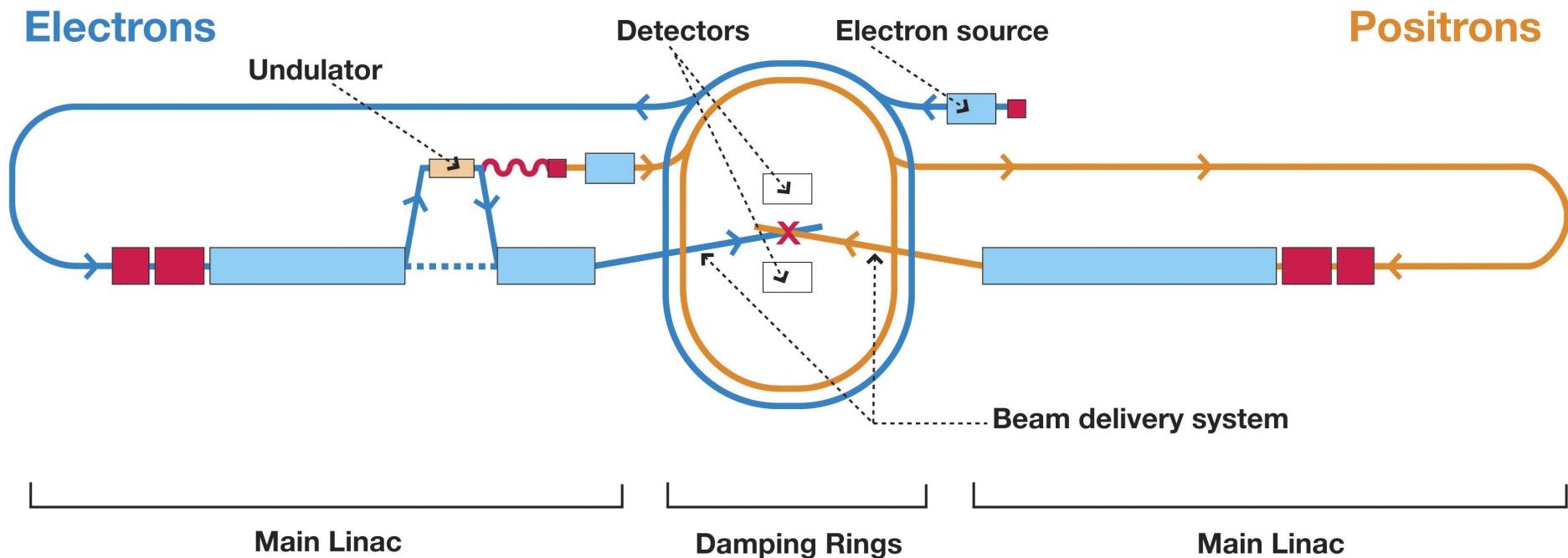
Some highlights from recent discussions in ECFA (cont.):

LHeC: (old) Proposal by Dainton et al. to install an [ep collider in LHC](#).

- 70 GeV e^- $\sqrt{s}=1.4 TeV$ 20 times more Q^2 , x down to 10^{-6} :
would allow to do QCD in extreme conditions, also EW, BSM
- They ask ECFA to create a working group
for machine issues and physics opportunities.
- ECFA suggest to initiate a working group for the physics
issues (physics vs. lumi),
- recommend to wait with machine issues, since manpower is
now needed to make LHC operational with higher priority.

ILC developments: From ECFA chairman's report:

- Reference Design Report available: 31 km (0.5 TeV), 31.5 MV/m, 1.3 GHz SC cavities (would be about 50 km for 1 TeV)
- Cost review has taken place, no change required.
- Engineering Design Report planned for 2010.
- figure from RDR executive summary:



At Daegu ILCSC has taken the next 3 steps towards Lols for ILC detectors in phase with the ILC EDR phase :

- Appointment of a Research Director : Sakue Yamada (ret. KEK)
- Call for Letters of Intent with a deadline of october, 1st 2008
- Installation of an International Detector Advisory Group (IDAG) to act as a review board for the Lols



Goal : Arrive at 2 detector reference designs which address the ILC physics and are adopted to the specific ILC IR requirements (push-pull operation in particular)

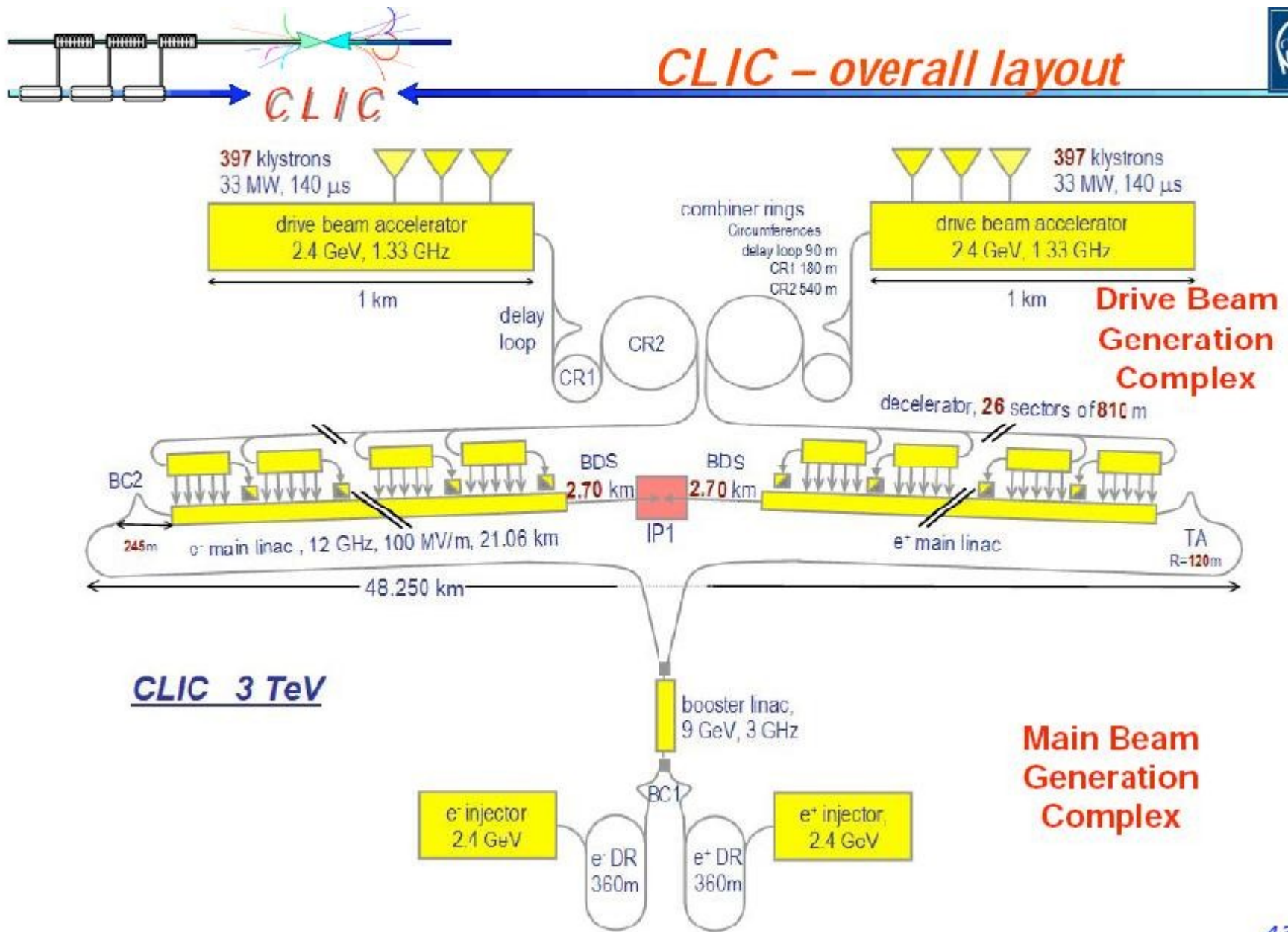
- ▶ This call will not exclude other groups to join in future
- ▶ No firm commitment required from signing groups.

CLIC development

Took note of J.P. Delahays presentation in the September SPC:

- New parameters for CLIC: 12 GHz, 48 km (for 3 TeV), 100 MV/m
- CTF3 project evolving
- CLIC advisory committee being setup
- Conceptual Design Report is planned for 2010

- Possible in kind contribution from Switzerland to CTF3: 12 GHz power source (see Lenny Rivikins presentation)
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Present Swiss delegates to ECFA (nominated for 6 years):

- X. Wu, UniGe, (since November 2006)
- T. Schietinger, PSI (since May 2003)
- T. Speer, UniZH (July 2002 - September 2007)

- U. Straumann (R-ECFA, since Oct. 2003),
also ECFA secretary (July 2005 to May 2007)

The CHIPP board proposes

- 1.) to replace U. Straumann
by T. Nakada, Lausanne
- 2.) to replace T. Speer
by M. Weber, Bern

from December 2007 onwards