IEFC workshop 2011
Experimental Areas – summary

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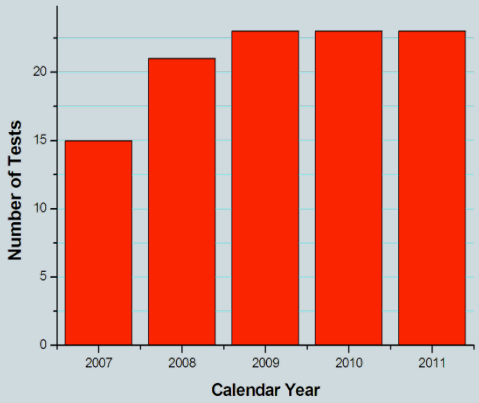
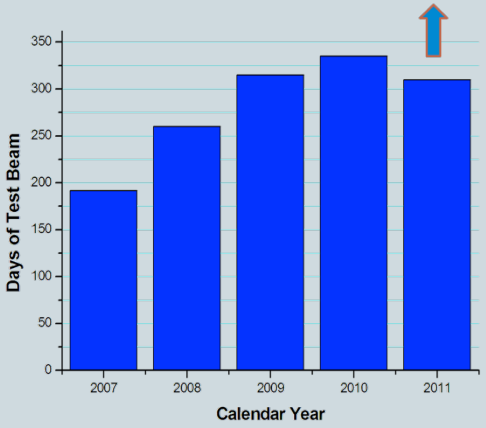
Session 3 – Experimental Areas

- What future for PS EA and nTOF – L.Gatignon [EN-MEF]
- How to ensure a bright future to the AD machine – T.Eriksson [AB-OP]
- ISOLDE in 2011 and beyond – Y.Kadi [EN-HDO]
- SPS experimental areas & CNGS, there to stay – E.Gschwendtner [EN-MEF]
- Experimenters' dreams for future facilities – I.Efthymiopoulos [EN-MEF]
- HiRadMat knocking at the door – A.Pardons [EN-MEF]
  - → good attendance to the session (~80 people)

PS East Area and nTOF

- The area has **lots of users** and have run nicely in 2010
- It actually has 5 beam lines:
  - T7 (IRRAD)
  - T8 (DIRAC)
  - T11 (CLOUD)
  - T9+T10 (test beams)





- There is a need for test beams at energies below the NA
- **Consolidation needed**. Also **AIDA** project started in ’11 and expects compensation by CERN. Requests for experiments have been already made. → **new layout**

PS East Area and nTOF

- Table budget summary

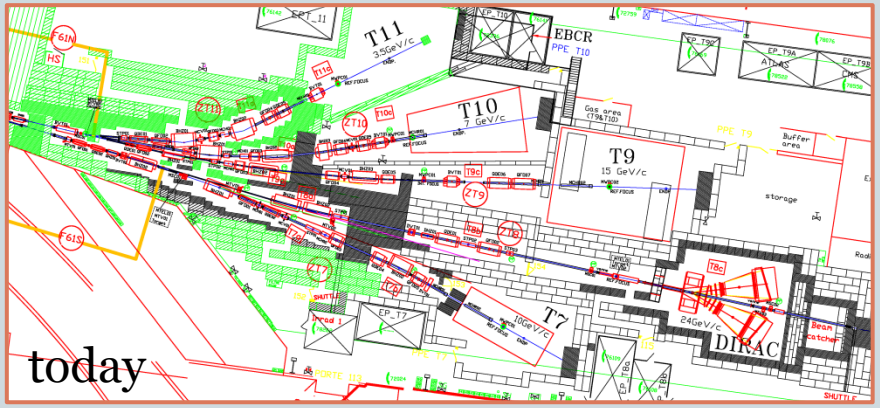
		kchf	FTE	
1	p^+ facility	450	0.5	PH (TBC)
2	Mixed field facility	1500		
3	Layout transformation	1555		
4	consolidation	8755	13.5	
5	Civil + access + various	3200	1.5	
	TOTAL	**13500**	**~15**	

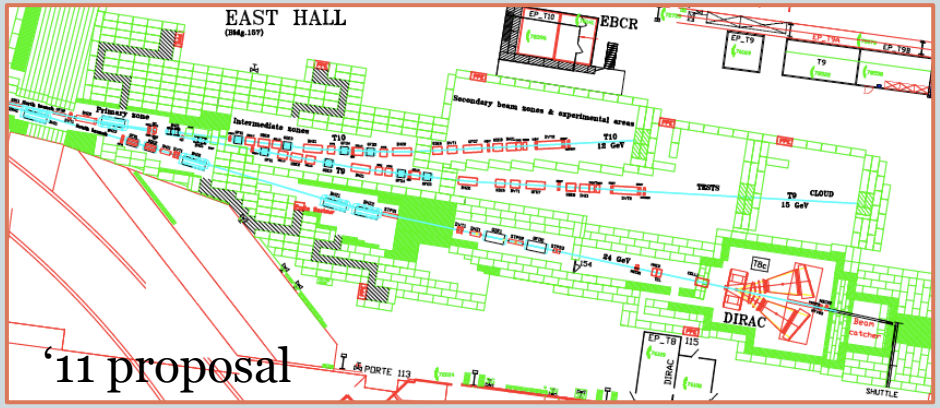
- DIRAC is expected to stop before the LHC LS1, then move → Who will pay for **DIRAC dismantling**

ACTION

PS East Area and nTOF

- Today's layout → 5 beam lines, 2exper, **3test areas**
- New layout → 3 lines, 2exper, but **test areas = 1 +0.5**
  - (1 + 1 shared with CLOUD – 50% available)





- It is a good starting point but **need review** of layout design to go ahead. Also infrastructure req for IRRA
- nTOF runs well, EAR2 proposal → wait for submission

ACTION

AD

- Several project are on paper / on mind :
- Is there any **conflict** between them?

  AEGIS physics foreseen 2014-16

  but ELENA install ‘13-’14 (physics ’15)

  and PAX? And others?

  ACTION
- For the future AD seems to remain a **EU key facility** for antiproton physics (FAIR…?)
- **Consolidation** : 40 items list, to be revised

  → planning in respect to ELENA and others…

  → maximize physics, minimize resources and conflicts with LHC LS1 (see General Remarks at the end)

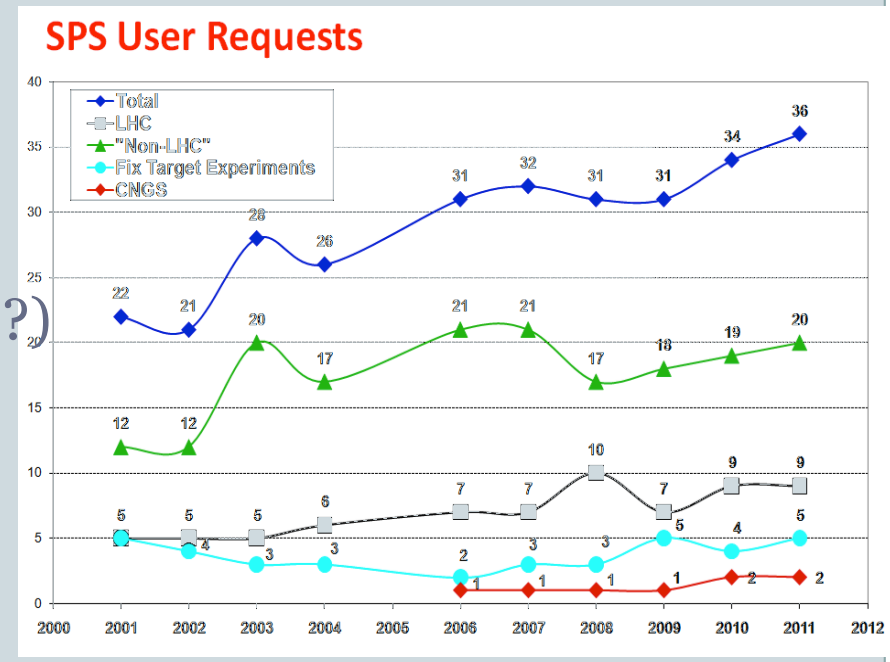
  ACTION

ISOLDE

- → launch a review for the implementation of **ALARA** processes: ACTION
  - Distinction should be made between standard maintenance and urgent interventions
  - Distinction should be made between new and recurrent activities
- **Control Room** : the access through experimental area should be avoided → planning/modification ? ACTION
- '12-'13 EN & TE activities / LHC LS1 (see General Remarks)

SPS North Area and CNGS

- The North Area has **lots of users** and have run nicely in 2010
- **Consolidation**: it involves major investments :
  - Power converters – not yet approved (20Mchf, 30FTE,LS2?)
  - Magnets – partially ongoing
  - Targets & Obstacles control – ongoing (750kchf, 5yrs)
  - Access system – ongoing
  - CV & EL ?



- The whole plan and budget h[illegible]e to be reviewed → add to consolidation program

ACTION

SPS North Area and CNGS

- COMPASS & COMPASS-II → till ‘21 (to be approved)
  need **consolidation** too (2/3Mch[illegible] ACTION
- NA62 physics in ‘14 → new beam line, dismantling NA60, NA48 completed. New beam dump
- NA61, NA63, UA9 → ion program in ‘11 and ’12
- CALICE (ILC & CLIC) → 20w test beam in ’11 (**spa** ACTION
- CNGS → should reach wanted total pot in ’15
  → and **after** ? Cannot switch off so easily ACTION
  future proposal (Italy)
  → **water issue** ACTION

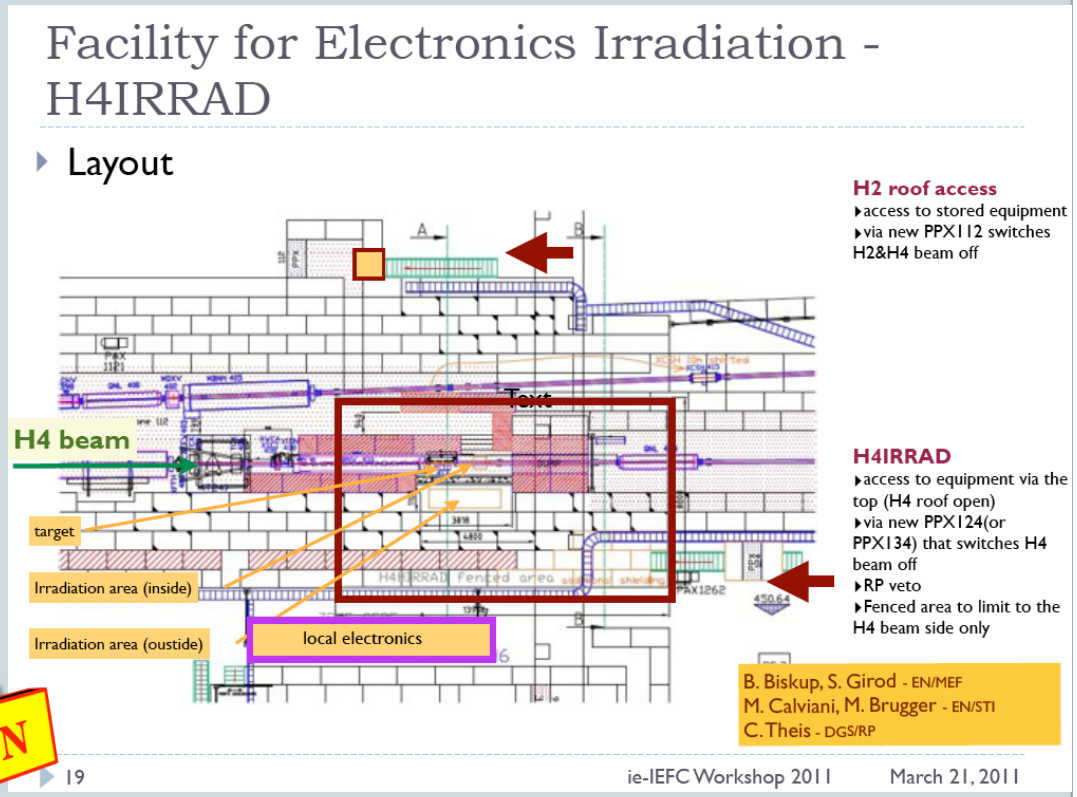
Future Projects

- A large variety of projects in the pipeline
  - Operation and maintenance of Secondary Beams and EAs must be assured for the far future
- Projects “around the corner”:
  - H4IRRAD : required by R2E/LHC
  - GIF++ : LHC experiments
  - PS-neutrino beam : waiting SPSC evaluation
  - AIDA : Very-Very-Low-Energy(VVLE) beam design

H4IRRAD

- Ready for beam in May/June'11 → **tight schedule**
- Beam intensity vs RP safety
  - Ok for 10^9 ppp in 2011
- First stage towards a new facility in PS East Area
  - Should be already considered in the East Area layout? Cost implications?

ACTION

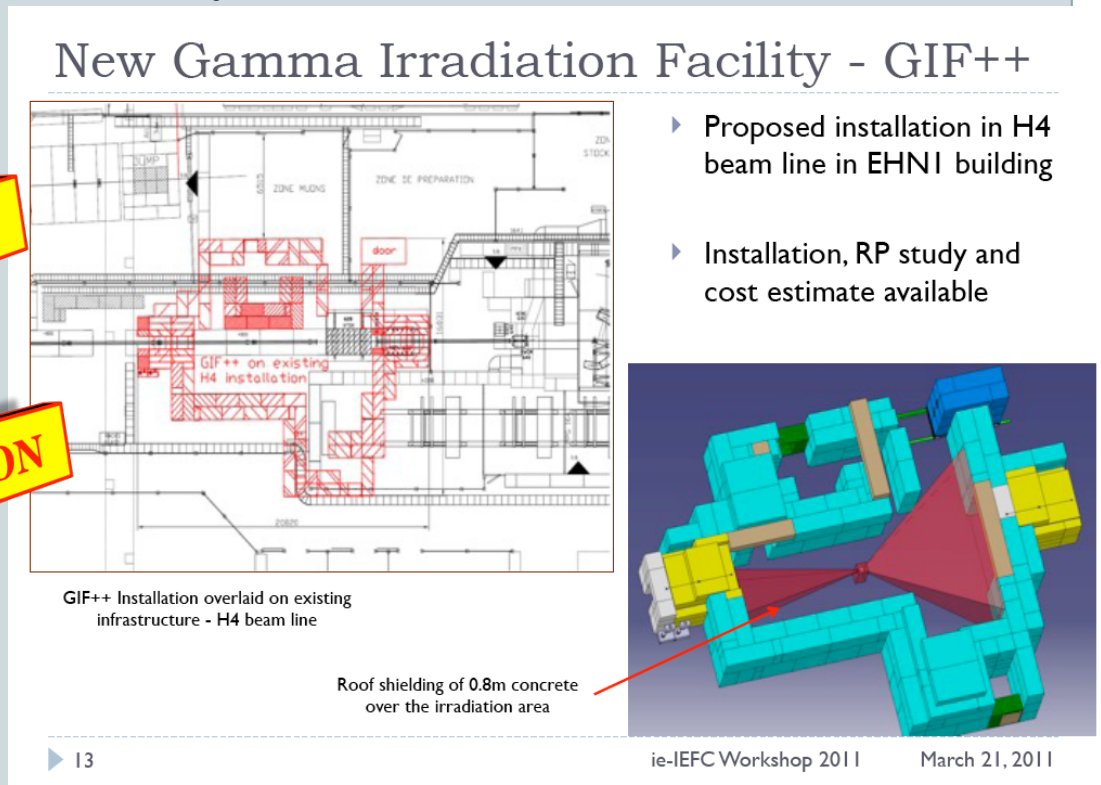


GIF++

- Design study completed – ready for construction
- Part of AIDA project
  - Funds to external teams to use it !!!
- Need to clarify missing funding
  - ~600kCHF – PH?
- Schedule to define as well
  - Source delivery time ~1 year → possible to do something before LS1?

ACTION

ACTION



Future projects

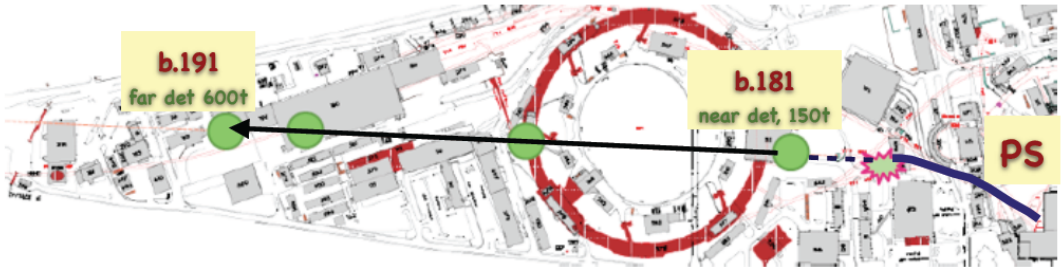
- PS ν-beam : proposal to SPSC under evaluation. Design study to follow
- Other design studies:
  - **Neutrino physics** : LAGUNA_LBNO
  - **Plasma Wakefield Acceleration** : EuroNNAc Network activity, new exp. Area
  - **Medical physics applications** : LEIR, PS East Area (take it into account for the new layout?)

ACTION

PS - Short Baseline ν-beam

A search for anomalous neutrino $\nu_\mu \rightarrow \nu_e$ oscillations at the CERN PS with LAr-TPC detectors *(C. Rubbia et al.)* arXiv:0909.0355v3 [hep-ex]

Courtesy: R. Steerenberg - BE/OP



- Beam line originally operated in early 80's for PS169, PS181, PS180(BEBC) experiments
- Experiment request: 2.5 10^{20}protons/year x 2 years, ready by 2015 (after CNGS)
- PS beam possibilities (180d, 85% efficiency) :
  - 6.13 10^{19} ÷ 2.02 10^{20} from zero to max impact to PS users

	Old neutrino facility		New neutrino facility		
	PS dedicated Feb-Mar 1983	PS parallel 1983 - 1984	PS dedicated	PS parasitic	PS ultimate[7]
Proton Momentum	19.2 GeV/c	19.2 GeV/c	20 GeV/c	20 GeV/c	26 GeV/c
Protons/pulse	1.25×10^{13}	1.2×10^{13}	3×10^{13}	2.6×10^{13}	4×10^{13}
Max. rep. rate	1.2 s	14.4 s	1.2 s	1.2 s	1.2
Beam energy	38 kJ	38 kJ	96 kJ	84 kJ	166 kJ
Average beam power	32 kW	2.5 kW	80 kW	70 W	140 kW

HiRadMat

- Good progress, getting ready for first beam in 2011
- Operational procedures & docs to be defined
  - Access for external users tbd
  - Application form for users tbd
- Aim for three experiments in 2011

ACTION

Readiness 2011

18 Remaining work

- **Dismantling 99% finished**
- **Beamline 90% installed**, remaining part planned for **week 13**
- **Beam dump** will be **completed** in **week 19**
- **Ventilation system will be ready for first user**. Installation before week 20 unsure. **Discussion on-going** to allow limited amount of test pulses/protons without ventilation.
- **Experimental area test tables** designed & tested, production under way, will be **ready for first user**
- **Cabling for test tables** remains to be done during the next technical stops (weeks 13, 19&25). Installation sequence will be done such that the **needs** for 2011 **will be met before installation first user**.

Ans Pardons IEFC Workshop Mar. 22, 2011

Conclusions and General Remarks

- Lots to come for all EAs : new projects **AND** consolidation
- LHC LS1 : CERN resources are **only** 100%, not everything can be done in // for experimental areas

  → need for a general, common LS planning **including** EAs

  ACTION
- ISOLDE → lesson on **safety** management to learn for all EAs

  ACTION