

Oxford 22/3/99

Detector concept beyond Sitges

From Oxford to the TDR

3/99

10/2000 1st draft

- Schedule
- Detector parameters
- Open questions / options

① Schedule

Main parameter (geometrical, performances, not technologies)

to be frozen by 10/99



10/99

General meeting

early 7/99

Intermediate meeting

today

Identify open questions
and possible options

assign responsibilities


② Detector parameters (geometry)

	CDR		"extreme" (??) modification
Vtx R_i	22	mm	12 ✓
Intermediate Tracker	Y		N
TPC R_i	40	cm	20 ⓔ
R_o	170	cm	150
$L/2$	250	cm	200
B-field	3	T	4 →
R_{bore}	3	m	2.5
E_{cal}	inside		outside coil
H_{cal}	inside		outside
$E_{\text{cal}} + H_{\text{cal}}$	≈ 5	1 inside	3
μ -toroid	Y		N ⓔ μ - made drawers

Open questions / options

Vertex layout of Forward Direction
of layers
material budget


→ b, c -tag, Z -spectrum ($ee \rightarrow ee$),
 $\Delta E_y, \dots$

Options: CCD, (LR)APS, 

Chirp

ITC Y/N, layout of Forward/EC Dir.
material budget

→ Patrec, track merging, Z -spectrum, ...

Options: (remove), short TPC, R_i (TPC) \downarrow ,
SI, GEM, Micromegas, MGWC, ... 
honeycombs

Très

TPC $R_i, R_o, L/2$
occupancy
layout endplates

→ Global tracking optimisation

Klaus

Magnet

3T.... 4T
are 4T mandatory for R_1 ($V_{trk} = 12\text{mm}$)

→ ΔE_{jet} , ΔE_{cubes}

Vienna

Calorimeter

λ 's inside 'vs' outside coil
spatial resolu'n 'vs' energy resolu'n

→ # longitudinal samplings

same or different technology
for barrel / EC?

Presampler needed?

→ ΔE_{jet} , ΔP (jet-jet), ΔE_{γ} ,
non pointing γ 's, ...

Options: Shashlik, Tile, ~~LAr~~, ~~crystals~~,
Si-W/Fe

Seez'o

Mark

design optimisation
instrumentation
Very Low angle tags?

→ background

Graham + Ljv

'bunch tagger'

"ToF" ?

Tracker ?

specialized det. vs part of already existing det.

Backlash

Particle ID (space for) special det?

high $\gamma\beta$ vs low $\gamma\beta$ (≈ 0)

Ties

Muon

EC / Forward Direction

Options: RPC

Naucleo