

ILD meeting at GENEVA



What is the DBD

- Similar to the ILC LOI: present the concept of the ILD detector
- Different from the LOI:
 - Where options are discussed, they are discussed at a similar level
 - Strong emphasis on detector integration and all its aspects
 - Strong emphasis of results of prototyping work, less on extrapolation
 - More reliable costing
- Include physics analyses:
 - Low energy running
 - Fill holes in 500 GeV running
 - High energy running (1 TeV: connection to CLIC)

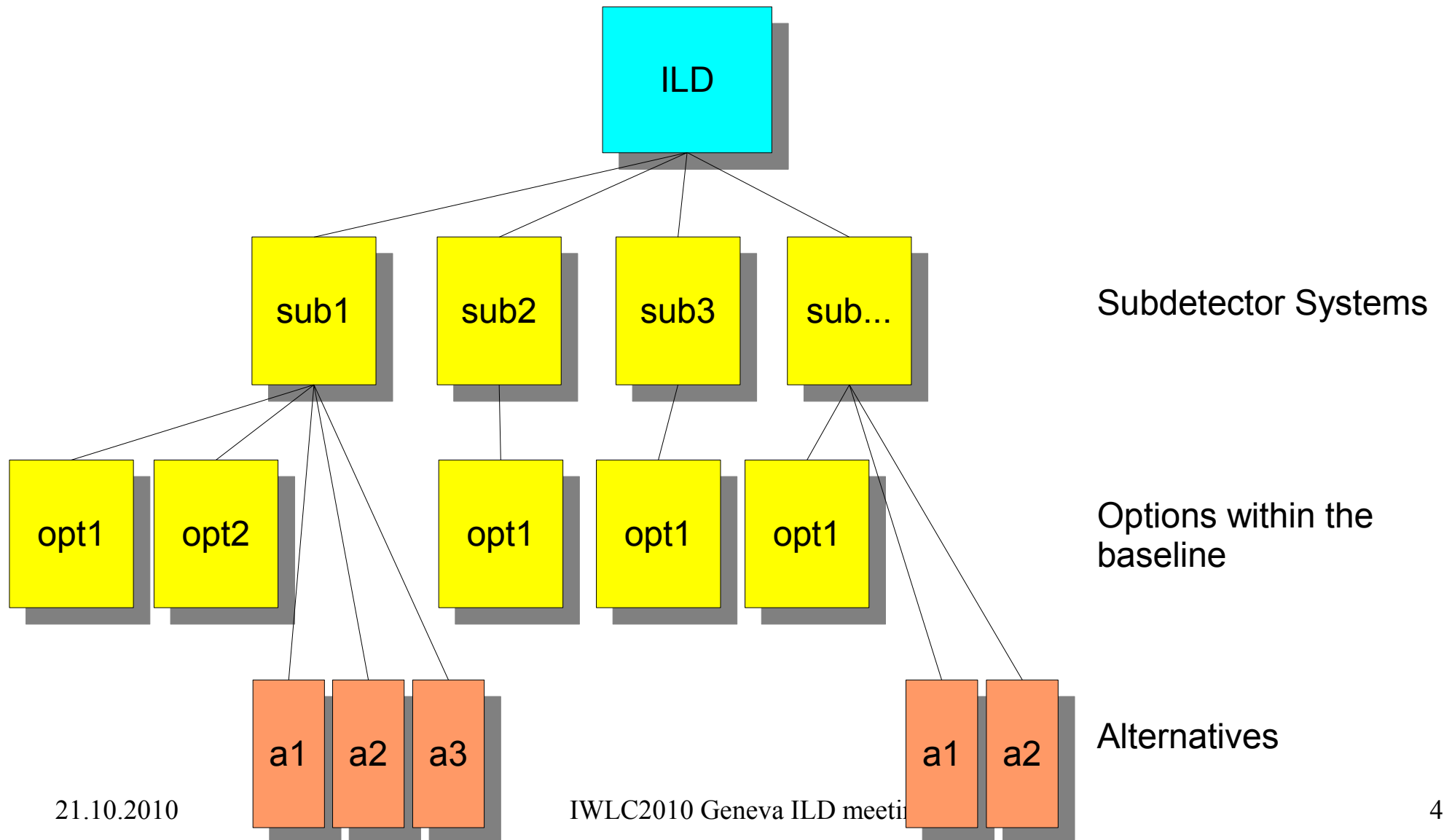
Physics at ILD

- Question: when do we fix the software baseline
- Question: what scale of production are we heading for:
 - Complete a la LOI for 1 TeV
 - More limited and focussed production?
- Need to restart the physics effort more seriously soon:
 - Organisation of this?
 - Contributions?
 - Topics?

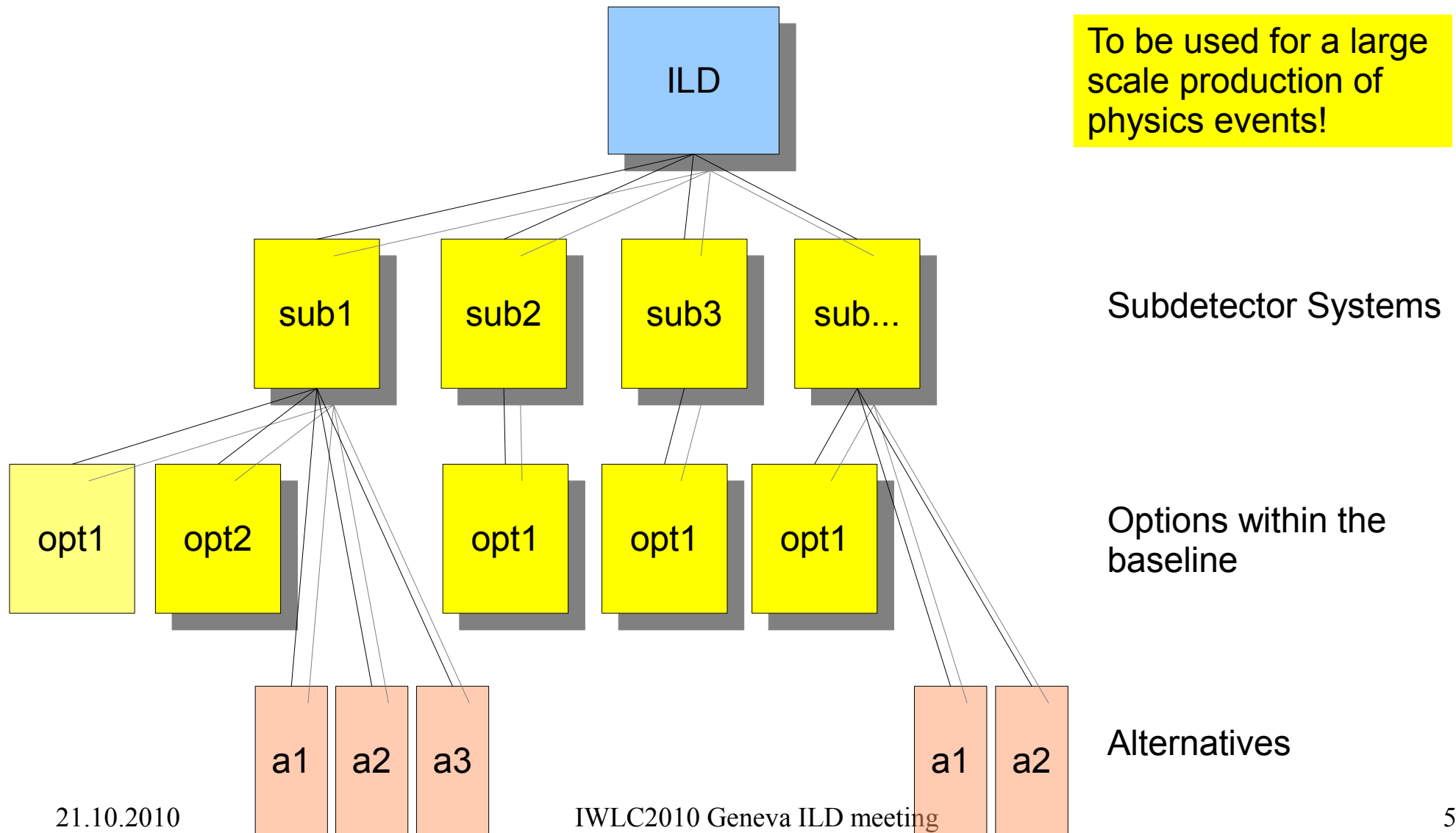
Obvious topics:

Higgs self coupling
Higgs branching ratios
Top precision physics
May others?
Have to make up a list...

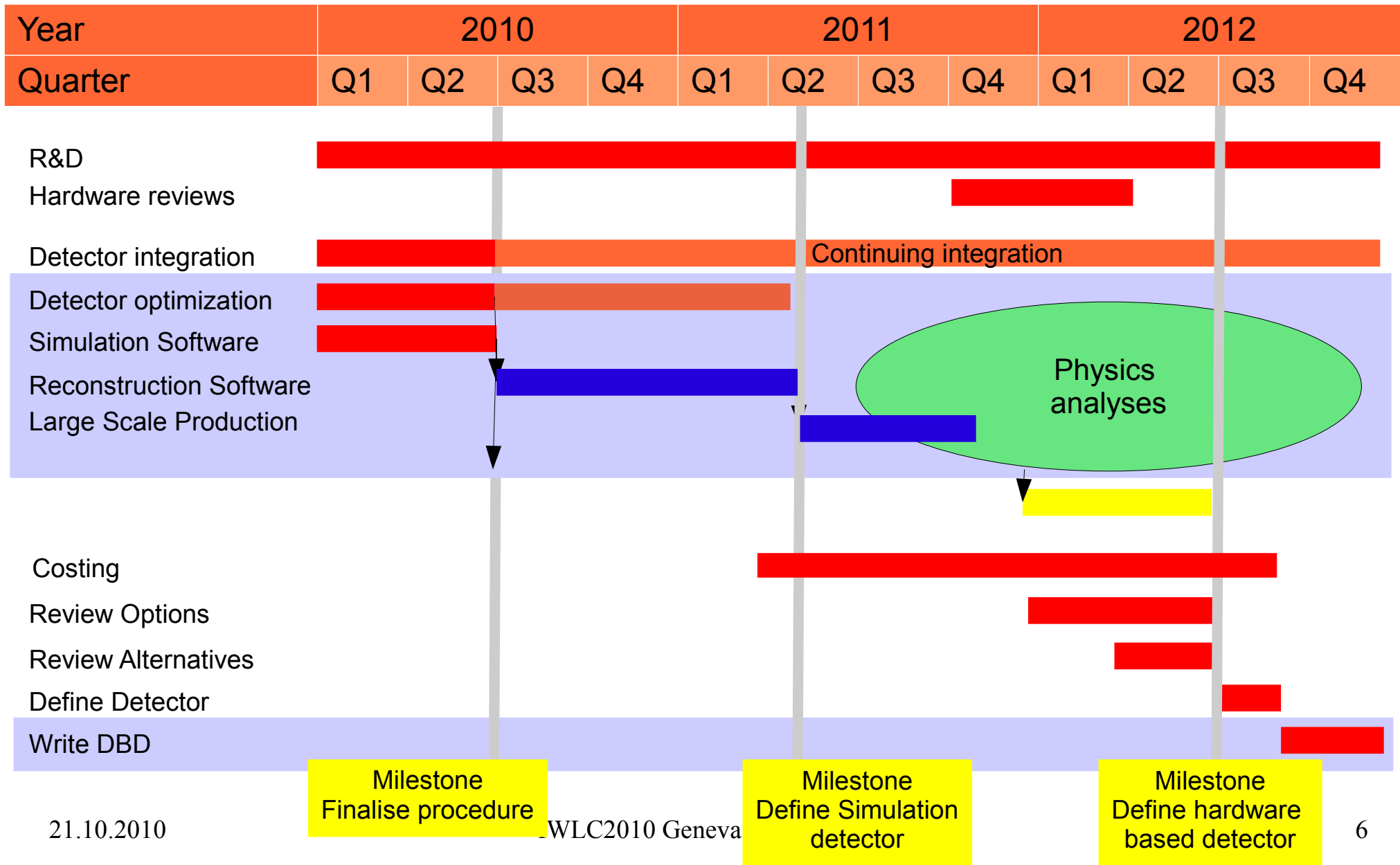
ILD baseline



ILD: simulation baseline



ILD planning for the DBD



ILD baselining

We intend to select baseline technologies based on their readiness in 2012

We will need some sort of review process

to develop a consensus

which technology meets the requirements and which one does not

2-step process:

- 1) prepare the material within the R&D collaborations, probably need an internal agreement on technologies, propose technologies to ILD
- 2) Within ILD decide which technology will be included as baseline

Anticipate this for the first half of 2012

Proposed Criteria

1) Subdetector Performance:

Primarily based on parameters given in LOI, update where needed

2) demonstrate the performance

- in simulation
- in adequate test beam experiments

3) demonstrate integration

- provide sufficient detail to be able to integrate into the ILD detector
- develop an engineering concept (level to be defined within the subdetector people)

Integration

EDMS: please use the tool and help to fill it with life: every subdetector is asked to contribute

Other open questions:

- how to handle the placeholder volumes (cables, services, ...)
- central rules for integration:
 - cooling rules
 - powering rules
- Change Control:
 - process needs to be setup
 - at DESY we will try to have additional dedicated manpower (money in AIDA available for this)

ILD schedule

- Impressive progress on the simulation
- Need to converge within O(6) month on a software baseline
 - Need intense communication between subdetectors and software
 - Need common discussion in about 6 month time:
- Propose dedicated ILD meeting in May 2010:
 - Coordinated with CALICE meeting
 - Proposed place is KEK
 - Exact date is still under discussion, but will be around mid May

ILD shortterm

Interim report

Main coordinator Hitoshi Yamamoto: see slides by Hitoshi

Interim Report

-LOI-related parts-

To be written by LOI groups

- 2. Activity of the detector R&Ds (30 pages)
- 3. Physics simulation updates (10 pages)

To be written by common task groups

- 4. Common task group (10 pages)
 - Mostly the description of activities
 - Avoid duplications with 2 and 3 above

Suggestions of contents

Interim report = since RD has been established

In practice: ~updates from RDR

In the following slides,

- ‘(SiD+ILD)’ : combined section is suggested
 - Authors can choose to separate out some items
- ‘SiD, ILD’ : separate subsection for each LOI suggested
- Suggested number of pages are shown as (n)
 - Can be adjusted according to needs

2. Activity of Detector R&Ds

~20 pages

Concept introduction (1)

- SiD, ILD

Vertexing (2)

- SiD, ILD

Tracking (4)

- TPC: ILD
- Si trackers: SiD
- Si trackers: ILD

Calorimeters (5)

- (SiD+ILD)

Forward region (2)

- (SiD+ILD) ?

Magnet Coil (1)

- (SiD+ILD)

Muon system (1)

- (SiD+ILD)

DAQ (1)

- (SiD+ILD)

MDI (3) – coordinate with GDE

- Push pull: (SiD+ILD)
- Assembly: (SiD+ILD)
- Alignment: (SiD+ILD)

3. Physics simulation updates

Software (1) ~10 pages

Benchmark Modes : (SiD+ILD) (6)

- Higgs: mass, Br(cc)
- Tau pair production
- Top pair production
- Chargino pair production, Neutralino pair production

Other modes : SiD, ILD (3)

- ILD
 - WW beam pol. measurement, LHT, ZHH...
- SiD
 - Bino production, $H \rightarrow \mu\mu$...

Authors from each LOI group

Detector R&Ds

Concept introduction 1

Vertexing 1

Tracking 1

Calorimeters 2

Forward region 1

Magnet Coil 1

Muon system 1

DAQ 1

MDI 1

Physics simulations

Software 1

Benchmark modes 2

Other modes 1

Any comments?

ILD relation to CLIC

Currently ILD has no “official” representation within the CLIC effort

However

There is a lot of collaboration at the level of the R&D collaborations

- CALICE test beam
- LC-TPC cooperation
- Software cooperation
- Probably many others

Question: do we need a more formal approach from the ILD side?