

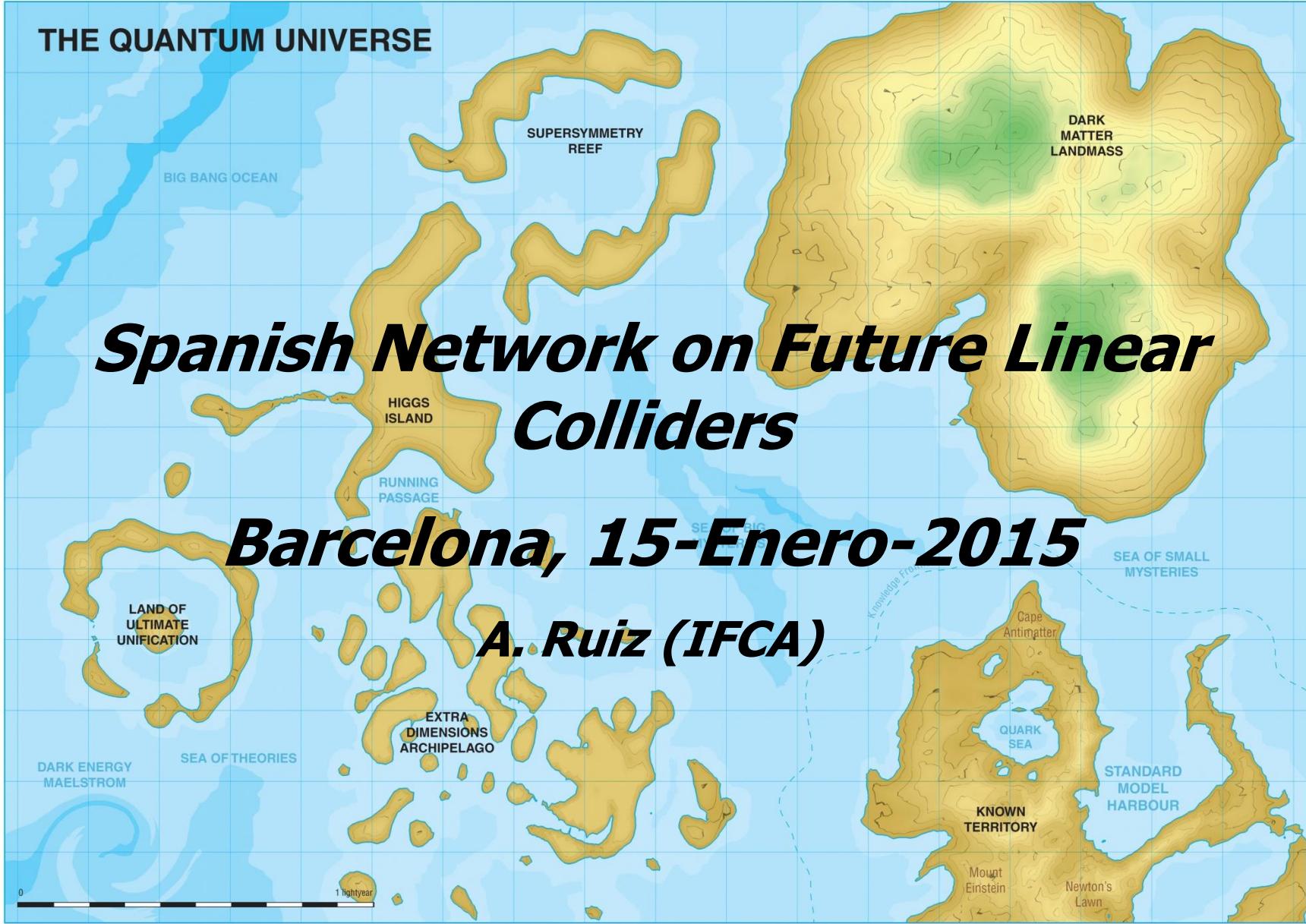
THE QUANTUM UNIVERSE

Spanish Network on Future Linear Colliders

Barcelona, 15-Enero-2015

A. Ruiz (IFCA)

0 1 lightyear



Several activities since last Meeting in Sevilla

➤ ***An overview of ILC/CLIC related activities of Spanish FLC network***

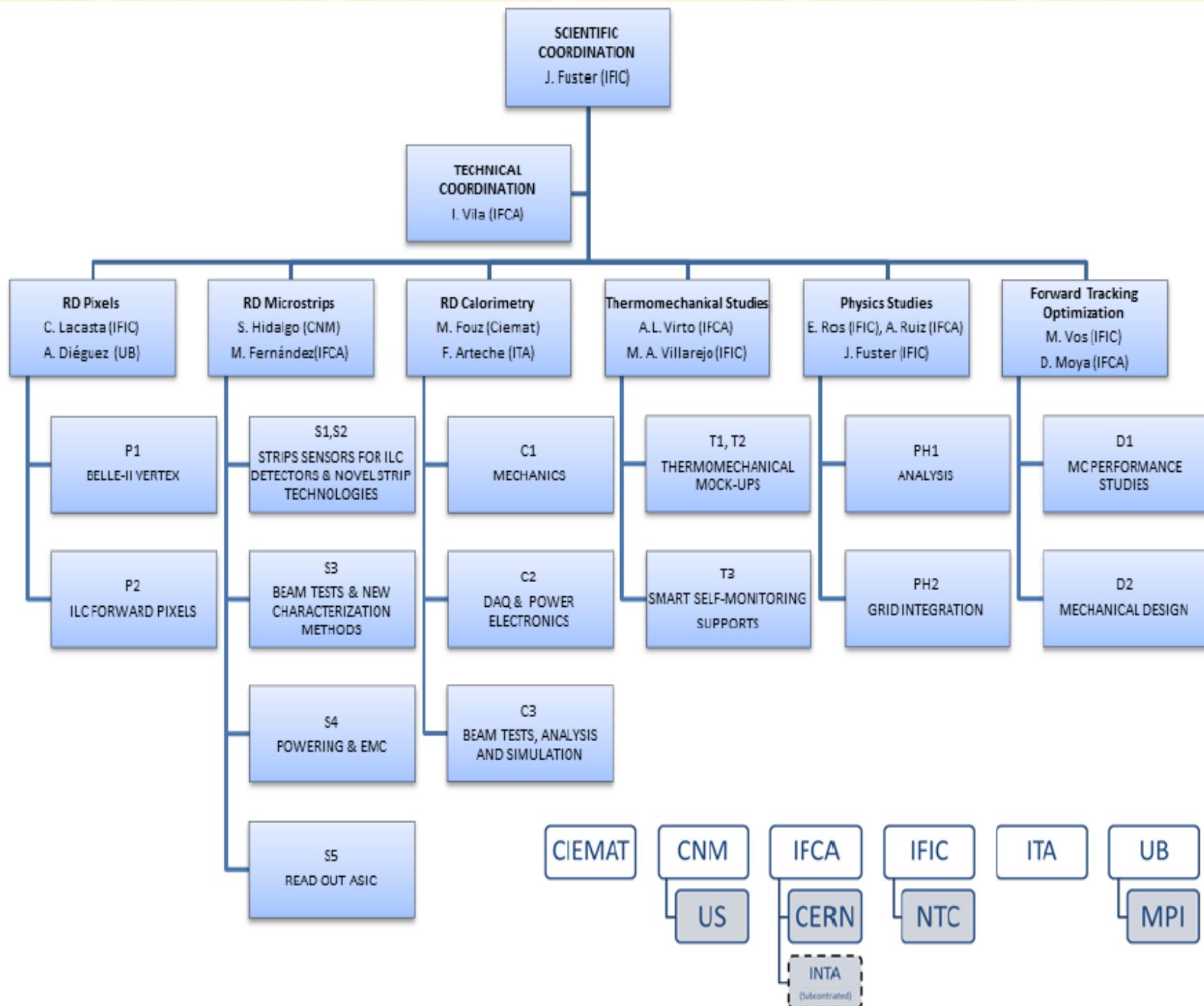
In this meeting:

- **General Session** (ILC status, MEXT, FLC network)
- **Accelerator Session** (CIEMAT and IFIC activities, CNA, Conecta)
- **Theory and physics analysis** (General physics interest and some analysis)
- **Silicon Tracker and Calorimetry** (DEPFET, FTD strips, mechanics,...)
- **Proyecto Coordinado:** Closed session

THANKS to Angel Diéguez for the very good local organization

Status of the network:

- A new proposal was presented for a Thematic Network, with the main objective of coordinating the activities on physics studies and development of new technologies in view of future colliders, linear leptonic (International Linear Collider (ILC) / Compact Linear Collider (CLIC)), or circular (FCC/CERN, CEPC-SPCC/China).
- In line with the coordinated project (next slide)
- Not supported the new proposal, but present network Project has been extended to the end of 2015



Main events concerning FLC spanish network since Sevilla (detectors, see accel. session for accel. Status. See Fuster talk for ILC status)



from March 19-21, 2014

SDHCAL Overview MaryCruz Fouz

Americas Workshop on Linear Colliders

12-16 May 2014

Fermilab, Batavia, Illinois, USA
www.linearcollider.org/awlc14



DEPFET status report

A new jet reconstruction algorithm for e+e- colliders

Forward tracking status report

Marcel Vos (speaker and convenor vertex and tracking sesión)



Chairman: J. Fuster (IFIC)

Local organization: .. F. Cornet, A. Faus, I. García, C. Lacasta, A. Ruiz,...

Plenary Talk: Energy-frontier colliders - the road ahead. N. J. Walker (DESY)

Parallel sessions:

Accelerator Physics and Future Colliders

Detector RD and Performance (convenor I. Vila,..):

- [C. Lacasta](#): ATLAS Upgrades for the next Decades
- [M.Cruz Fouz](#): Performance of highly granular calorimeters In test beams
- [Eva Vilella](#): Strategies for using GAPDs as tracker detectors in future linear colliders
- [Marca Boronat](#): DEPFET pixel detectors for future electron-positron experiments
- [E Currás](#): 2D position sensitive microstrip sensors with resistive charge division along the strip
- [O. Alonso](#): Readout electronics for the Silicon micro-strip detector of the ILD concept

Strong Interactions and Hadron Physics

- [Nacho García](#): A new jet reconstruction algorithm for e+e- colliders

Top-quark and ElectroWeak Physics

- [Nacho García](#) :Measurement of the top quark mass and couplings at Linear Colliders



Oshu City 2014

5-9 September 2014



Marcel Vos:

DEPFET R&D Status

Forward Tracking: Status and Goals

Fernando Arteche:

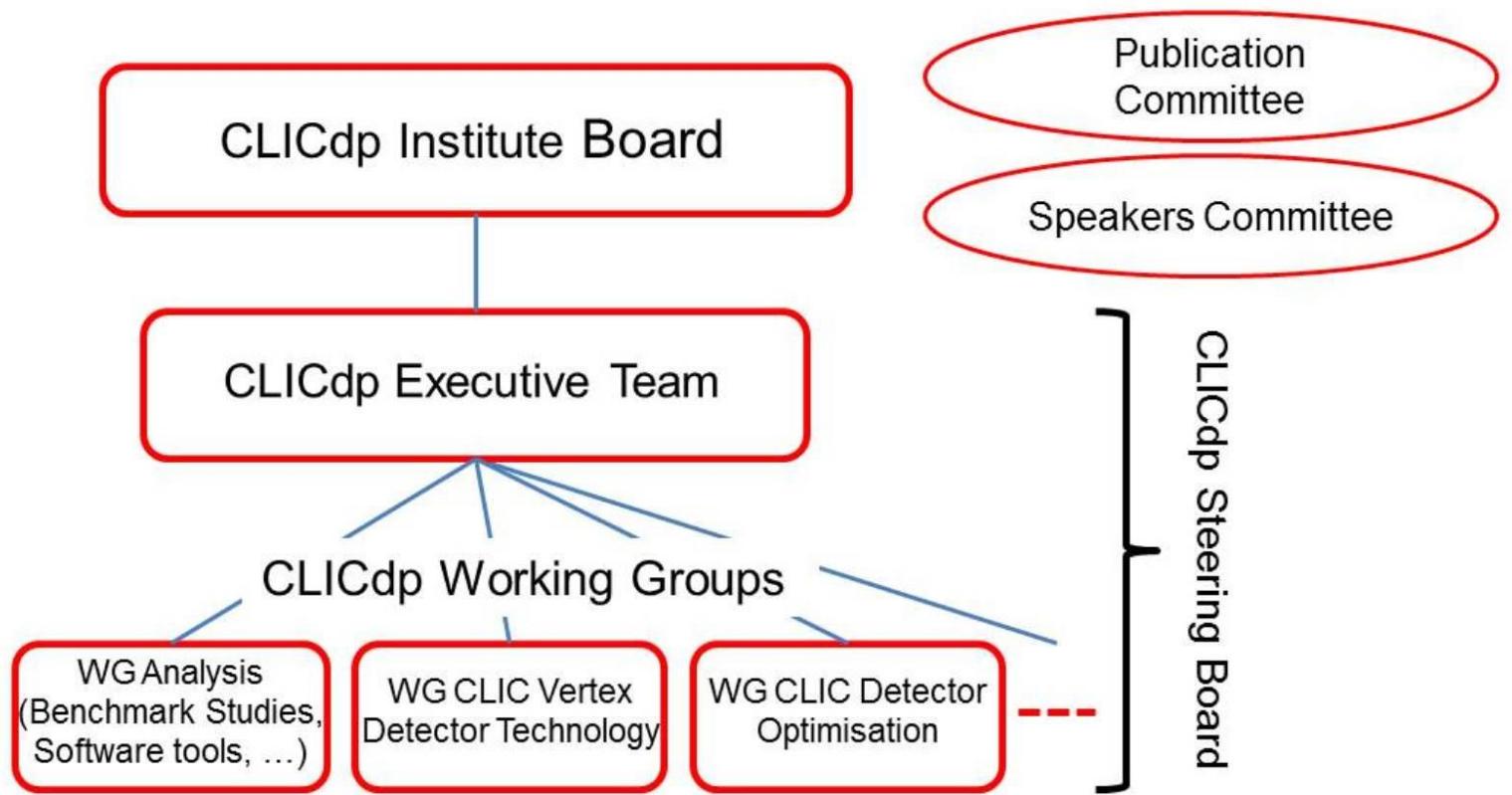
Power Pulsing: Recent progress



I.Vila: *Status report on charge-division and Low-Gain microstrips sensors for ILC trackers*

M.Angel Villarejo: *Towards a realistic design for a forward tracker at the ILC*

Fernando Arteche: *FTD-ILD sub-detector power distribution system prototype based on Supercapacitors*



CLIC Detector and Physics Collaboration Meeting (10-11 June 2014 CERN)

M. A. Villarejo:

Update in the DEPFET vertex detector for a future linear e⁺ e⁻ collider

CLICdp Institute Board Meeting (23 Sept 2014)

CLIC Higgs paper, New CLIC staging baseline, top physics ↔ Higgs physics at lower energy stage, Detector optimization working group,....

Others:

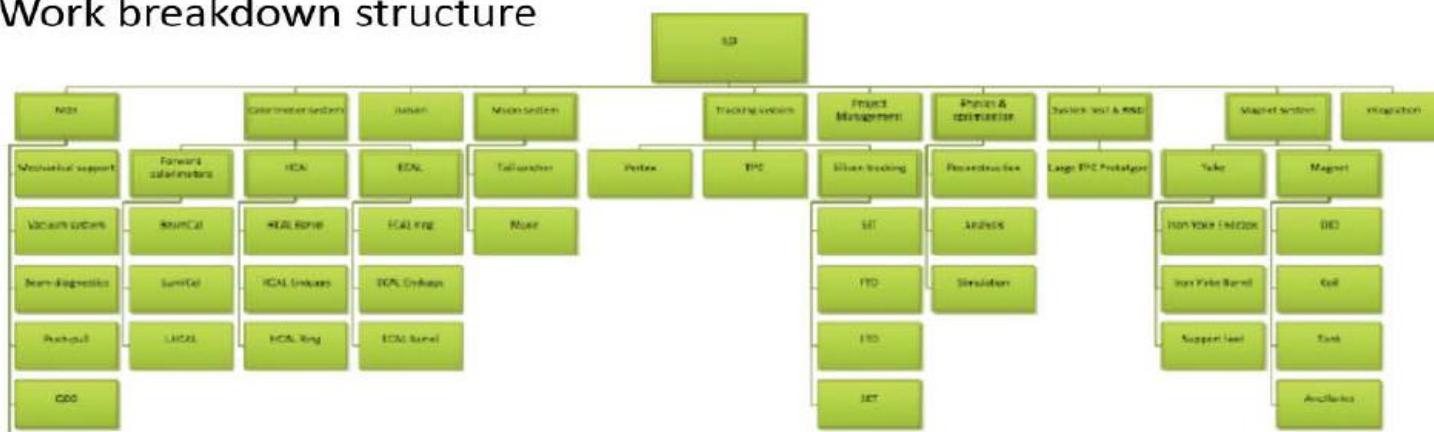
ILD-Survey

SIT+FTD	Now	Y1 Q1 Q2 Q3 Q4	Y2 Q1 Q2 Q3 Q4	Y3 Q1 Q2 Q3 Q4	Y4 Q1 Q2 Q3 Q4	Y5 Q1 Q2 Q3 Q4	Y6 Q1 Q2 Q3 Q4	Y7 Q1 Q2 Q3 Q4	Y8 Q1 Q2 Q3 Q4	Y9 Q1 Q2 Q3 Q4	Y10 Physics Run	Total in construction phase	TDR value
Timeline	R&D	TDR		Construction off site									
Budget													
Annual budget (MILCU)			0,23	0,46	0,46	0,46	0,46	0,115	0,115				2,3
FTE from external labs/univ item													
Sensor	4,5	7,5	7,5	7,5	8	8	8	2	2	1,5	0		52
FE electronics (ROC)	0,75	6	6	6	4	4	4	1	1	1	0		33
FE electronics (hybrid+optical link)	0	3	3	3	2	2	2	1	1	1	0		18
Disk & ladders integration	0,75	3	3	3	2	2	2	2	2	0	0		19
Mechanical support	2,25	3	3	3	4	4	4	4	4	0	0		29
Cooling	0,75	1,5	1,5	1,5	2	2	2	2	2	1,5	0		16
Assembly/alignment	0	0,75	0,75	1,5	4	4	4	4	2	2	2		23
Fiber Sensors Monitor	1,5	1,5	1,5	1,5	2	2	2	2	1	1	2		14,5
DAQ	0,75	3	3	3	4	4	4	4	4	4	1,5		30,5
Power distribution system	3	4,5	4,5	4,5	4	4	4	2	2	1,5	2		31
Software	0,75	4,5	4,5	4,5	4	4	4	4	4	3	5		36,5
Management	0,75	0,75	0,75	0,75	2	2	2	2	2	1,5	1		13,75
Total	15,75	39	39	39,75	42	42	42	30	27	15,5	15		316,25
FTE from ILC labo item													
Services								0,25	0,25	0,25	0,25		0,25
Total	0	0	0	0	0	0	0	0,25	0,25	0,25	0,25		1
FTE on site item													
Sensor								2	1	1	0,75		0
FE electronics (ROC)								1	0,5	0,5	0,5		0
FE electronics (hybrid+optical link)								0,5	0,5	0,5	0,5		0
Disk & ladders integration								0,5	1	1	0		0
Mechanical support								1	2	2	0		0
Cooling								0,5	1	1	0,75		0
Assembly/alignment								1	2	1	1		1
Fiber Sensors Monitor								0,5	1	0,5	0,5		1
DAQ								1	2	2	0,75		1
Power distribution system								1	1	1	0,75		2
Software								1	2	2	1,5		2
Management								0,5	1	1	0,75		0,5
ILC labo staff	0	0	0	0	0	0	0	0,25	0,25	0,25	0,25		0,25
Total	0	0	0	0	0	0	0	10,75	15,25	13,75	8		7,75

Managing Integration

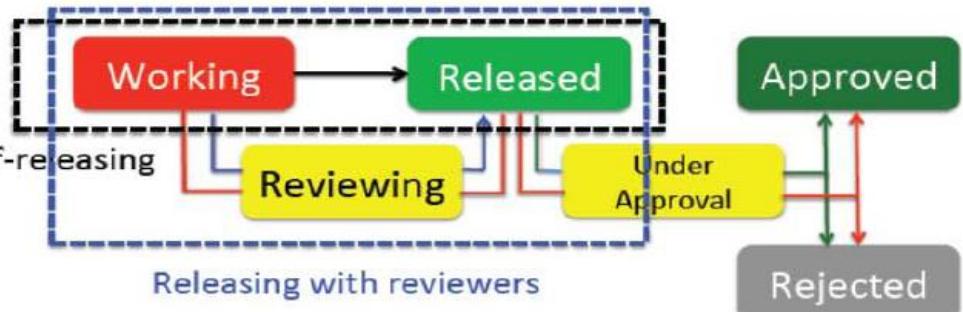
Need to move to a more formal system to manage and control the evolution of the detector design:

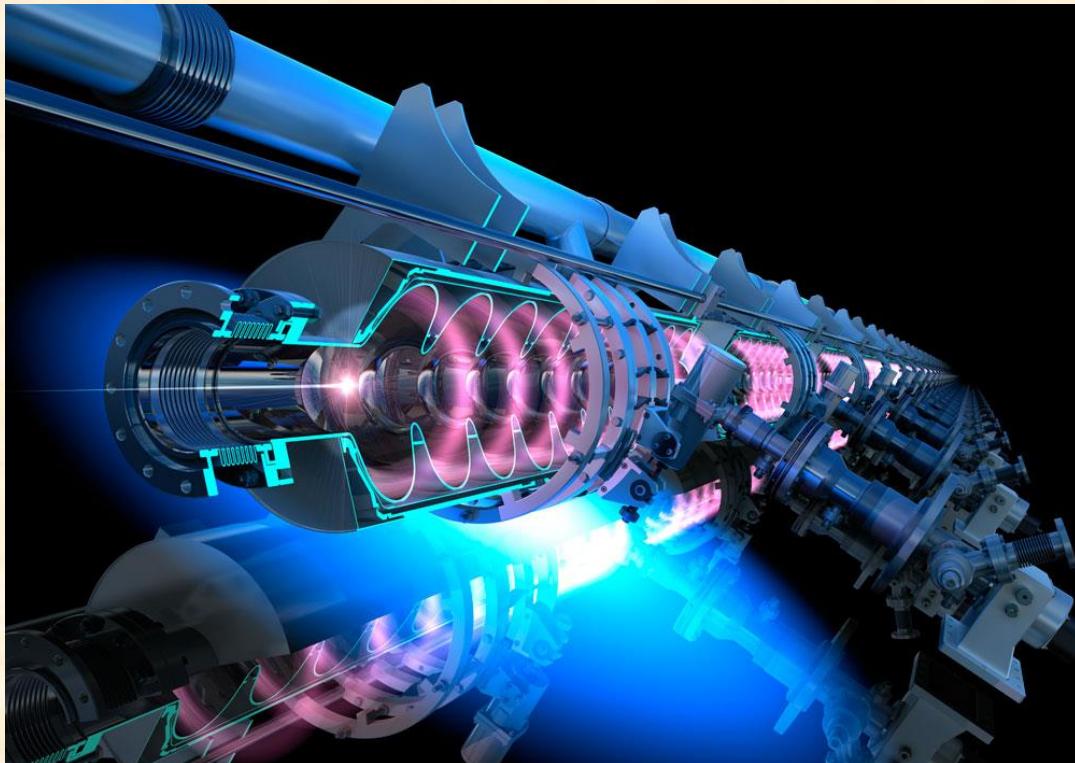
Work breakdown structure



Manage information for
the ILD detector:

Need to set this up so that
we re-gain control of our
information





Detector R&D session

MDI: [Karsten Buesser](#), [Thomas Markiewicz](#)

CALICE: [Jose Repond](#), [Felix Sefkow](#)

(CALICE meeting will start from April 19 (Sun))

LCTPC: [Jochen Kaminski](#), [Akira Sugiyama](#)

Silicon Trackers and Vertex Detectors:

Alberto Ruiz Jimeno, Marcel Vos, Ivan Vila, Macimo Caccia, Joel Goldstein, Ronald Lipton, Yasuhiro Sugimoto



Capacity	248	50	30	24	12+12	46	34	12	130	45	120
Projector availability	Yes	No	will be arranged	will be arranged	Yes	Yes	Yes	No	Yes	Yes	Yes
WiFi availability											

4/19 (Sun)	10:00-12:00										CALICE
	13:00-15:00					LOC setup					CALICE
	15:30-18:00					Registration					CALICE
4/20 (Mon)	8:30-9:30										
	9:30-10:30					Registration			Plenary		
	11:00-12:30	Plenary									
	14:00-15:30	ACC1				LOC	ACC2	ACC3	Physics	MDI	CALICE
	16:00-18:00	ACC1		LCTPC	LOC	ACC2	ACC3		Physics	MDI	CALICE
	18:00-19:00		vertex & Silicon	LCTPC	LOC	ACC2	ACC3		Physics	MDI	CALICE
4/21 (Tue)	9:00-10:30	ACC1		LCTPC	LOC	ACC2	ACC3		Physics	MDI	CALICE
	11:00-12:30	ACC1		LCTPC	LOC	ACC2	ACC3		Physics	MDI	CALICE
	14:00-15:00	ACC1		LCTPC	LOC	ACC2	ACC3		Physics	MDI	CALICE
	15:30-17:30		Plenary		LOC			Plenary			
	17:30-18:30		A party with wine, snacks, etc.		LOC						

4/23 (Thu)	9:00-10:30	Phys+ILD+SiD				LOC	ACC2		ACC1		ACC3
	11:00-12:30	ILD				LOC	ACC2		ACC1	SiD	ACC3
	14:00-16:30	ILD				LOC	ACC2		ACC1	SiD	ACC3
	17:00-18:00	Plenary: MDI&Phys+etc.				LOC			Plenary		
4/24 (Fri)	9:00-10:30	ILD				LOC	ACC2		ACC1		ACC3
	11:00-12:30	ILD				LOC	ACC2		ACC1		ACC3
	14:00-16:30	ILD				LOC	ACC2		ACC1		ACC3
	17:00-18:00	Closing Plenary				LOC			Plenary		