OVERALL SCHEDULE FOR ATF

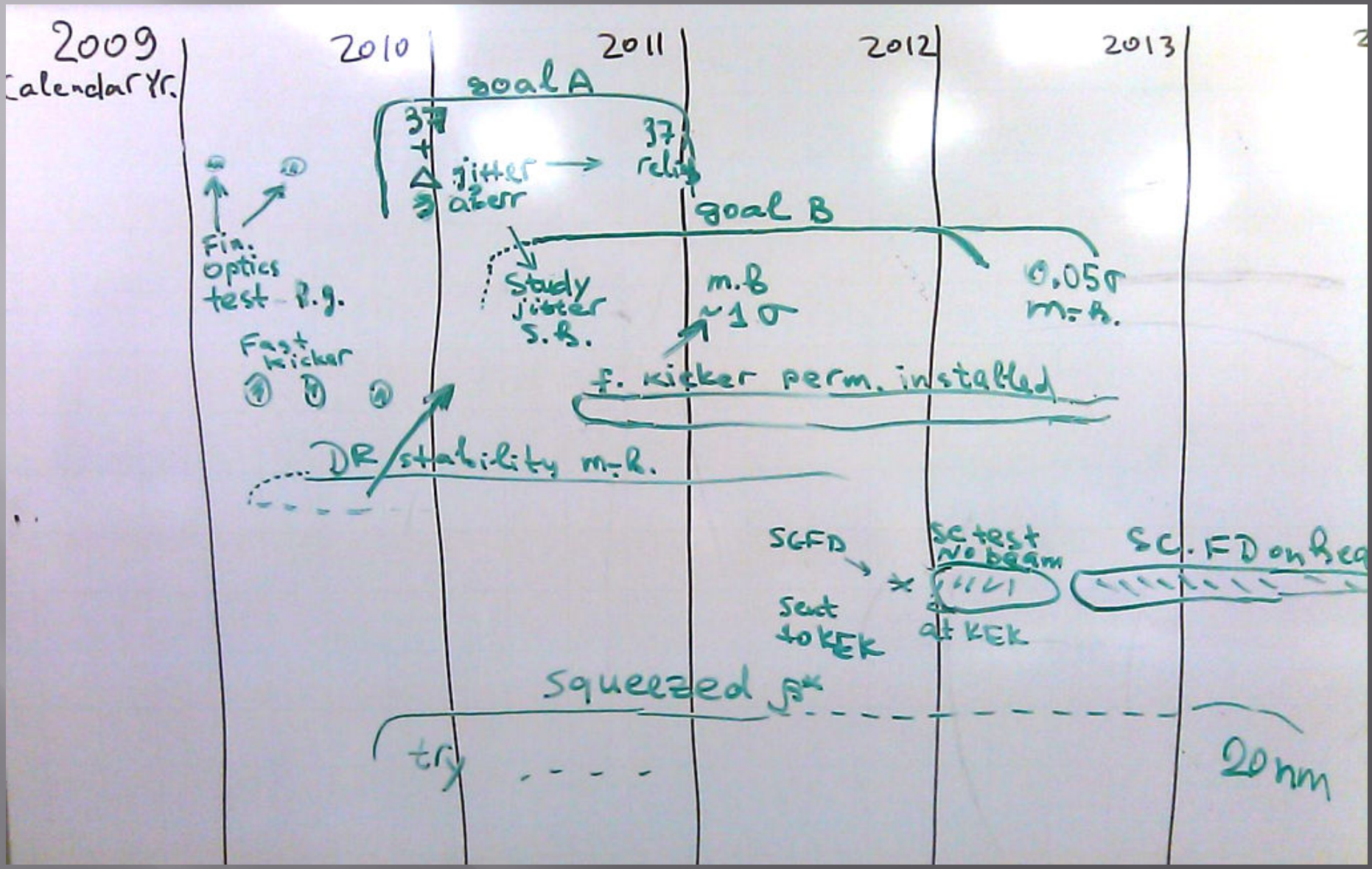
December 15, 2009

Necessary Deliverables from TF for BDS and DR

This is ILC GDE request.

Test Facility	Deliverable	Date
Hardware development, Optics and stabilisation demonstrations		*JFY*
ATF	Demo. of reliable operation of fast kickers meeting the specifications for the ILC damping ring.	2010
	Generation of 1 pm-rad low emittance beam	2009
ATF2	Demo. of compact Final Focus optics (design demagnification, resulting in a nominal 35 nm beam size at focal point).	2010
	Demo. of prototype SC and PM final doublet magnets	2012
	Stabilisation of 35 nm beam over various time scales.	2012
Electron cloud mitigation studies:		
CESR-TA	Re-config. (re-build) of CESR as low-emittance e-cloud test facility. First meas. of e-cloud build-up using instrumented sections in dipoles and drifts sections (large emittance).	2008
	Achieve lower emittance beams. Meas. of e-cloud build up in wiggler chambers.	2009
	Characterisation of e-cloud build-up and instability thresholds as a func. of low vertical emittance (≤20 pm)	2010
DAΦNE	Fast kicker design and pulser reliability check	2010
	Characterisation of e-cloud build-up and instability thresholds	2010
SLAC/LLNL	Fast kicker pulser development	2010

Present Schedule as of Dec 14, 2009



Tentative overall schedule as of Dec 15, 2009. To be updated on Dec 16.

Beam size goal: 1st priority

- The aim for 37nm at the end of 2010 remains
  - This address, partly, tests of demagnification
- Accept that measured beam size may contain contribution from jitter and remaining aberrations
  - One more year needed to understand the jitter, and get to reliable observation of the beam size
- On the way to end of 2010, will try-out nominal optics in early 2010, for background study, to evaluate the pace of the progress

Stability goal

- Goal B is focused first on understanding the single bunch stability on the level of 1 sigma, needed for goal A, gradually working towards 1σ and 0.05σ of multi-bunch stability
- This is supported by:
- Damping ring m.b. stability study
- Fast kicker tests, followed by its permanent installation in second half of 2011

SC FD tests & low β

- Tests of SC FD at KEK, off-beamline, are in first half of 2013
- Installation on beamline during summer shutdown of 2013
- Start work with SC FD on beamline in Autumn of 2013

- Low b tried in late 2010, continue throughout, and aim for 20nm in 2014