

DRAFT Minutes of the CLIC project meeting of 24.10.2012 (during the LCWS12 in Arlington, Texas)

The program and transparencies can be found here:

<https://indico.cern.ch/conferenceDisplay.py?confId=211166>

Steinar presents the minutes from the previous meeting.

News:

The three CDR volumes are finished; Vol. 1 still is in final checks for the image quality. Copies can be ordered (up to Dec 14) at

<https://indico.cern.ch/confRegistrationFormDisplay.py/display?confId=206903>

Action: a reminder will be sent out

Several collaboration proposals are in preparation and under discussion. The SLAC collaboration agreement needs to be renewed.

A MoA (Memorandum of Agreement) is drafted for physics and detector studies.

Steinar summarizes his impressions from the European Strategy session in Krakow. He gives a summary of the LCWS plenary talks and the accelerator session. Common sessions covered emittance preservation, power consumption, and system tests. There is a Higgs-factory session and working group sessions followed by summaries on Friday. A special linear collider event in Anaheim will follow the workshop.

Piotr presents the recent progress at CTF3. New 12 GHz accelerating structures and phase monitors were installed. A klystron tube change and vacuum leaks reduced significantly the operation time. The new structures have been conditioned and reached an acceleration of 16 MeV so far. First breakdowns have been recorded and show a possible coupling between the two structures.

The drive beam recombination has been improved for a factor 4 beam in the CR and a new optics was commissioned in the TL2 line. A new $R_{56}=0$ optics was commissioned in the Frascati chicane. The BPR waveguide signals show a shorter bunch length but Streak Camera measurements further downstream in the Delay Loop show no difference compared to the $R_{56}=0.45$ optics.

The regulation of the CTF3 water station was disturbed by the mains voltage variation induced by the AD cycle. The regulation of the water station was improved to take into account the voltage variation, and the temperature regulation is significantly better now.

Discussion: Roberto (inaudible at CERN)

Roberto shows the CTF3 experimental program for the end of 2012. The first priority is the drive beam quality, which is estimated to take 4-6 weeks. A reference setting for the different types of beam needs to be established. The TBTS structure is carefully conditioned, wake-field monitor tests are important. Breakdown kick studies are lower priority for the moment.

TBL has high priority for a deceleration goal of 30-50%. Phase monitor measurements have also high priority.

The winter shutdown will be short (two-weeks in Jan) and CTF3 will run until end of April, followed by a shutdown until August.

Some discussion about the dogleg line (inaudible).

Jan gives an update on 'Structure testing and RF tests stands'. The modulator pulse-to-pulse variation is at the 10^{-4} level. Conditioning, control and DAQ software development are ongoing. The pulse compressor conditioning was long. The T24 reached 80MV/m at a BDR of 10^{-6} /pulse and 170ns pulse width. The present goal is to reach 24/7 operation. The accumulation of network and structure breakdowns follow each other closely, the detection method needs to be verified. The DAQ development is not finished but first results are available. Logarithmic power detectors with a high dynamic range obtain a good power resolution. Jan shows some LabView DAQ examples. An improved DAQ system is being developed for new X-band test stands.

Igor reports on the future CERN RF test-stands progress. The 50MW CPI klystron is slightly delayed (brazing not successfully finished) but should be still in time for delivery in March 2013. The ScandiNova modulator should also be delivered by March. No final location has been found yet.

The Market survey for a low power cluster station is completed. Delivery is planned for Q2/Q3 2015. The location still needs to be defined.

The CTF3 dogleg components will be installed in the winter shutdown, so the beam can be run through the structure. The connection to the klystron is foreseen for May 2013.

On the question of how much room is available in building 150, Igor replied that there are 6x8m. Xbox 2 and 3 could be placed there together. Infrastructure is available and the noise level, etc. is acceptable.

Coffee break

Daniel gives an outlook on staging. The proposed stages are 375 GeV, ~1 TeV and 3 TeV and a klystron based first stage. The stages are not optimized, only the RF is, and in many other parts optimization can be done. The main costs result from Main Beam generation, Drive Beam generation and Main Linac. These systems are relatively independent and can be separately optimized first. The animators of these optimizations are:

- Main beam sources: Yannis Papaphilippou
- Drive beam generation: Roberto Corsini
- Two-beam acceleration: Alexej Grudiev
- Klystron-based first stage: Igor Syrathev

Daniel gives some example ideas of saving options. First results will be presented at the January WS.

Steinar shows the EU projects where four Mari-Curie Networks with relevance for CLIC are being prepared. One is on 'Structures and modules' (lead: Helsinki), one on 'RF power sources' (lead: Lancaster) and two others presented below.

Markus Aicheler presents the CLIMB network (Colliders Linking Initiative to Medical applications and Beyond), which combines medical accelerators, general RF technology and CLIC. The plan includes 13 EarlyStageResearchers (Ph.D students) (one unsure for the moment, 2 foreseen in industry), with 10 level 1 partners from 7 countries.

Helene Mainaud Durand presents the PACMAN (Particle Accelerator Components Metrology and Alignment to the Nanometer scale) network.

Steinar shows the planning of the CLIC workshop on Jan 28 to Feb 1st. An X-band day (Thursday) will focus on X-band technologies, structures/modules, power units (also including 1 GHz power needs) with general discussions in the morning, and parallel sessions on structures/modules, and RF power development in the afternoon. The purpose is to outline common projects for these two areas with potential users, and possibly industry. (followed by inaudible discussion)

A.O.B.: -

Frank Tecker, 20/11/2012