

WP 16 Video Meeting

Date: 03.07.2019

Time: 10 to 11:00 a.m.

Hosted by: CERN (A. Rossi/S. Sadovich)

Invited: A. Rossi, S. Sadovich; P. Apse-Apsitis; O. Meusel, M. Droba; D. Ondreka

Participants A. Rossi, S. Sadovich; P. Apse-Apsitis; O. Meusel, M. Droba; D. Ondreka

Indico-Page: <https://indico.cern.ch/event/820439/>

1 Introduction and WP Obligations

During K. Schulte-Urichs' maternal leave, her responsibilities as task coordinator will be temporarily shifted to D. Ondreka (GSI) for task 16.2 and to M. Droba (IAP) for task 16.3. D. Ondreka will communicate this change to the ARIES coordinator. (**Action:** D. Ondreka)

D. Ondreka accidentally missed to send the MS54 report to the ARIES coordinator. The report is finished since the Budapest meeting and will be sent in this week. (**Action:** D. Ondreka)

The delivery dates for MS55 and D16.1 have been officially delayed to month 40 and month 30, respectively. The shift of D16.1 has been accepted by the EU officer.

For MS56, the original delivery date (31.07.2019) can't be kept. After consultation with both partners involved (IAP and RTU), it is proposed to announce a delay of three month, i.e. a new delivery date of month 30 (31.10.2019). IAP will deliver a small text justifying the delay to the WP coordinator. (**Action:** M. Droba).

2 TE² and SCC gun: Status

IAP has started setting up a test stand for TE² and integrating the tungsten prototypes of cathode and grid into a volume ion source. The device will be set up in such a way that it can be integrated into the CERN test stand. Presently, the device is in the workshop for one week to fix problems with the integration into the vacuum vessel (an insulator needs to be adapted).

Once the device is ready, measurements of heat transfer from filament to cathode and of the temperature distribution on the cathode will be performed. These measurements are supposed to start mid next week. In the next step, HV will be applied to extract electrons. Then, the capacitance between cathode and grid will be measured and the voltage required to suppress extraction determined. The latter measurements are important for the construction of the corresponding mid-stage modulator. IAP will distribute measurement results via Email once they become available. (**Action:** M. Droba)

At beginning of September, experiments are foreseen at IAP with the mid-stage modulator and TE². Tentatively, the experiments will take place during calendar week 37 (9 to 13 September).

According to the present schedule, TE² should be shipped to CERN for integration into the test stand by November. So far, nothing seems to impede this plan. IAP will give an updated estimate for the expected delivery date two weeks after the first runs with TE². (**Action:** M. Droba)

3 Modulator: Status

The mid-stage power amplifier for a maximum voltage of 1 to 1.2 kV is under construction at RTU. It is expected to be ready by end of August, such that tests with TE² can be performed at IAP at the beginning of September (see previous section).

Upon request by S. Sadovich, P. Apse-Apsitis confirms that the modulator does not require water cooling.

4 CERN Test Stand: Status

The installation of the test stand is progressing. So far, vacuum chambers including heating jackets haven't been mounted in the solenoids and the HEL gun has been installed. The collector has not yet been ordered.

After baking out the vacuum chambers, the cathode is supposed to be heated up slowly to operational temperature. Following the procedure executed at Fermilab (no baking there), a time span of two weeks is foreseen for the heating. Due to the baking, the heating may possibly proceed faster, but this needs to be seen.

S. Sadovich has performed CST simulations for the transport of the SCC beam provided by K. Schulte-Urichs through the CERN test stand. The beam fits into the vacuum chamber. However, 4% of the particles get reflected by the repeller. It is supposed that this reflection is caused by the high magnetic field of 0.6 T in the gun solenoid, for which the SCC beam distribution has been created. S. Sadovich asks M. Droba, whether he could provide a similar distribution for the 0.2 to 0.3 T gun solenoid field at the CERN test stand. This issue will be settled among the two. (**Action:** S. Sadovich, M. Droba)

According to present planning, it is already clear that the delivery date for D16.3 must be delayed a bit. However, this will be announced later, when a more robust schedule for the manufacturing of the SCC gun is available from IAP.

Stage 2 of the CERN test stand will come next year. However, the SC drift solenoid will come later than originally foreseen.

5 Next Meetings

Due to the upcoming vacation period, the next WP video meeting will be held on 26 August.

A WP meeting in person is planned for beginning of September (tentatively, calendar week 37) at IAP in connection with the tests of TE² with the mid-stage modulator. The precise date will be fixed at the beginning of August, after the date for the tests has been agreed. (**Action:** M. Droba, P. Apse-Apsitis)

Note on availabilities: A. Rossi and S. Sadovich will be on business trip during calendar week 39 (23 to 27 September).