

# WP 16 Video Meeting

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Date: 14.11.2019

Time: 14 to 15 p.m.

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

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

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

Indico-Page: <https://indico.cern.ch/event/862631/>

## 1 Modulator: Status

*(Presented by P. Apse-Apsitis)*

There are no changes regarding the status of the modulator since the last video meeting.

## 2 TE<sup>2</sup>: Status

*(Presented by M. Droba)*

Achievements:

- The broken filament power supply has been replaced.
- TE<sup>2</sup> has been tested at 6mm cathode/grid distance and performs very well.
- Electron current is presently limited to 10 mA due to power supply and instrumentation.
- Grid voltages in the range  $\pm 1.2$  have been applied without sparking, at low cathode temperature to avoid exceeding the current limit of 10 mA.
- The grid remains cold even with the cathode heated to very high temperatures ( $\sim 2000^\circ\text{C}$ ).
- Temperature distribution on the cathode, measured using pyrometer, is very homogeneous.

The TE<sup>2</sup> design so far proved so successful, that future work continues under the assumption that this will be the design for the final device. The only remaining problem is degradation of the vacuum, which however is expected to be cured by introducing additional spacers.

The redesign of TE<sup>2</sup> with modifications to fit it into the CERN test stand is under way at the IAP workshop. Only the details of the mounting remain to be clarified between IAP and CERN.

Three additional sets of cathode and grid have been ordered, allowing for fabrication of additional TE<sup>2</sup> devices in time for possible tests at the CERN test stand in March and April next year (see below).

The existing TE<sup>2</sup> is basically ready for first tests with the modulator at low electron currents. A test during the second week of December is proposed.

## 3 CERN Test Stand: Status

*(Presented by A. Rossi/S. Sadovich)*

General information

- Starting around April next year, the test stand will be modified to include additional components (transport solenoid, BPM, BGC). It will then not be accessible for some time.
- CERN will provide a preliminary planning indicating good time slots for TE<sup>2</sup> measurements to IAP.

Status

Tests with the hollow electron gun prototype are ongoing.

The test stand will be opened in December for gun inspection. During this time, additional components will be installed as well (YAG screen, view port).

## **4 Next Meetings**

The next meeting will be a video conference on Thursday, 28.11. at 3 p.m.

Tests with of TE<sup>2</sup> with power modulator are tentatively scheduled for the week starting 9 December.

The next ARIES SC meeting takes place on 10 and 11 December on the CNRS campus at Orsay.