

UA9 Simulations Meeting, 24 June 2009

Participants: John Amann, Davide Bolognini, Gianluca Cavoto, Said Hasan, Emanuele Laface, Roberto Losito, Tom Markiewicz, Fabrizio Murtas, Marco Oriunno, Eric Prebys, Roberta Santacesaria, Marco Silari, Jim Spencer

Agenda

Reports on the UA9 MD Run on 18 June 2009: installation work, accelerator set-up, first tests with crystals and detectors, and implications for future simulations

AOB: Update on Roman Pot 2

Marco Silari gave a brief account of the installation work carried out on 18 June before setting-up the beam. See the Indico site of the UA9 Collaboration phone conference held on 19 June 2009, with the enclosed minutes and slides:

<http://indico.cern.ch/conferenceDisplay.py?confId=62808>

E. Laface (see slides) reported on the instrumentation operation and beam measurements (lifetime, emittance, tune, orbit). The tune is still not the desired one and will have to be corrected. The orbit also should be corrected. The beam was then scraped at 6 sigmas and the position of the TAL and of the crystal was checked. See also the above Indico.

A number of useful links are given in the last slide and are also listed below:

All measurements but collimator BLMs:

`/user/slops/data/SPS_DATA/MD_DATA/SPS-UA9_19_06_09`

(available from the CERN control room)

DFS repository:

<\\cern.ch\dfs\Experiments\UA9>

Data Analysis Logbook:

<https://abpc11310.cern.ch/UA9>

CCC Logbook:

<https://ab-dep-op-elogbook.web.cern.ch/ab-dep-op-elogbook/elogbook/elogbook.php>

(Log in as NICE user and select SPS)

Timber

<http://www.cern.ch/timber>

(Not sure it works outside the CERN network)

Collimator BLMs:

from TIMBER as explained here:

<https://abpc11310.cern.ch/UA9/4>

F. Murtas (see slides) gave a summary (also on behalf of G. Cavoto, R. Santacesaria and P. Valente) of the operation of the GEM detectors during a run of 12 hours between June 22nd and 23rd (routine SPS operation). The chambers GEM1 and GEM2 were set at 1200 V throughout the period. Both chambers showed good currents:

< 10 nA without beam

<200 nA with beam

The current readout was good and can be used to analyze the beam halo.

The pad readout had still problems due to noise induced in the FEE boards, although the thresholds were increased during the last access from 1100 mV to 1400 mV. This is probably due to the unscreened cable presently running between the crate below the tank and the GEM chambers and some grounding missing. The data taken will be analyzed over the next days. They need to have the SPS current values in the RUN data.

For the next access the plans are:

- changing the local LV cables with the screened ones (1 July or 14 July) (Fabrizio will ask Jerome Lendaro for new cables)
- testing the LV power supply with a long cable in Frascati for a better understanding
- changing the gas flux meter (the full scale is too high). A flux of 50 cc/min is needed, whilst the full scale is 1000 cc/min
- switching gas electro-valve on/off remotely: is it possible?

Said Hasan (see slides) reported on the operation of the Si-detectors located in RP1. The operation of the detectors started at 5:30 am. The most important information collected is a comparison of data taking during normal SPS operation and during the UA9 MD. The latter plot shows signal with beam in coast and during a beam loss. During standard operation a tail is seen in the beam whilst during MD the beam is flat, in agreement with the fact that during MD the beam is smaller.

Marco Oriunno reported on the status of RP2 ⁽¹⁾. Flanges and detector housings from SLAC, pot structures from Vakum Praha and bellows to interconnect the x and y boxes from Mewasa are at CERN. SLAC would need drawings of the support. Roberto Losito explained that a standard collimator support will be modified and used for RP2. Since this has to be done at low cost, there will be no detailed technical drawings but rather a sketch. With the existing set of drawings, SLAC will produce the remaining parts using mechanical workshops in the Bay Area.

Last week CERN completed the 3D model of the RP2, where some improvements have been made to simplify the parts and reduce the machining time. These modifications have been implemented in the drawings already in the hands of the firms tendering the bids for production. On 22 June, the SLAC technician interfacing with the companies has been asked to start the production with the lower bid or to split the contract into two or more subcontracts to speed up either the administrative procedure or

⁽¹⁾ Information also taken from the e-mail exchange between Tom and Roberto

the total time required to complete. All the parts should be ready for the middle of July and shipped to CERN by the end of the month, but this is not guaranteed.

The missing parts are the linear screws, but the order is ready.

The final assembly and the vacuum conditioning will be done at CERN as soon as the pieces are delivered, but CERN will appreciate that all the parts are test-assembled at SLAC before shipping. Roberto Losito mentioned that it would be good that some people from SLAC can be at CERN for the final assembly. Marco Oriunno confirmed that somebody will be present for installation and for assembly if necessary. Approval will be needed from the CERN vacuum group before the equipment can be installed.

Marco Oriunno will try to give weekly updates on the work going on with RP2.

People from SLAC who will need to access the SPS need access authorization. Send list of people who will come to CERN to M. Silari, for checking access rights.