

## 10<sup>th</sup> Secondary Beam Line Meeting

### 30 May 2016

**Present:** Sebastien BUSTAMANTE, Bartolomej BISKUP, Valentine FEDOSSEEV, Pierre GANDER, Roman GORBONOSOV, Marine GOURBER-PACE, Edda GSCHWENDTNER, Roman GORBONOSOV, Christoph HESSLER, Mathias HUETHER, Lars JENSEN, Mikhail MARTIANOV, Stefano MAZZONI, Josh MOODY, Erdem ÖZ, Veronica OLSEN, Gennady PLYUSHCHEV, Karl RIEGER, Janet SCHMIDT, Krzysztof SZCZUREK.

These minutes and the presentations can be found on Indico at:

<https://indico.cern.ch/event/537660/>

### AWAKE Control Preparation

In order to prepare the AWAKE control system for the experiment, an inventory of the status of each system, the missing specifications, deadlines and responsible persons was done.

#### 1. Consoles for local control room:

- a. 7 linux consoles, which are on the technical network with the Awake OP account and one general PC have been ordered and will be available in the next week.

#### 2. Front end computer

- a. BI: everything concerning the experimental area is installed, what is needed for phase 1 (except of the streak camera equipment). The phase 2 part will come later.
- b. File reader: could run on the OTR front end. Veronica needs the addresses of the other windows machines, in order to test communication. → **Action: Misha, Josh, Karl.**
- c. laser: front end should be installed in the local control room. At the moment, the PC is in Isolde → **Action: EN-STI to request transport to the AWAKE control room.**
- d. plasma cell: → **Action Patric, Enrique to define the front ends.**

#### 3. Timing:

- a. BE-CO has not yet received many MGT timing specifications from the experiment, vacuum and the phase 2 BI equipment. → **Action: All to end your trigger requests with a 3-week notice period** to the BE-CO contacts,

loan Kozsar and Benjamin Ninet for each of the coming milestones. This notice period is needed due to the holiday period to ensure our readiness.

→ **Contact person for timing: loan Kozsar and Benjamin Ninet.**

- b. Triggers for BI in the proton line are available.
- c. OTR/CTR: cables for triggers are in place. → **Action: Misha, Karl need to contact loan and Benjamin to define delay of trigger** (after event → for example from extraction pre warning, typical timing interval is 25ns). Note that a trigger will only come with the AWAKE cycle in the SPS.
- d. laser: → **Action: EN-STI confirm that they get all timing signals from the RF.**

#### 4. OASIS:

- a. 4 +1 OASIS channels for experiment have been ordered (Rubidium density upstream/downstream, photodiode streak-camera, Schottky diode TSG41, Laser photo diode). The OASIS rack is cfc-tsg4-csaos11.  
→ **Action: Misha will check for all channels if cables are pulled between the rack and the equipment and send the info to the CO contact for OASIS, Benjamin Ninet.**
- b. → **Action: the EXPERIMENT users** take care of the triggers for the OASIS channels. → The users should define, for each SIGNAL, the TRIGGER for the start of acquisition and the end of acquisition. Example of a trigger: "SIX.W100FO-TS (this trigger corresponds to the SPS first injection 100 ms Forwarning signal). These triggers should be sent to **Benjamin Ninet**.
- c. **Logging of OASIS channels** has to be requested explicitly to BE-CO. There are 2 solutions: 1/ Logging of signals with dynamic settings (the logged signals are those currently displayed in the OASIS viewer with their related settings) or 2/ logging of signals with permanent fixed settings (those are independent on settings used in OASIS viewer -> this solution requires to deploy a parallel OASIS installation dedicated to logging). **The solution 1 is recommended by CO in a first stage to allow the EXPERIMENT users to gain experience with OASIS and evaluate if dynamic logging is sufficient.**

#### 5. Logging:

- a. BI: see slide from Lars. The layout positions of the BLMs have to be clarified  
→ **Action: Chiara, Janet.**  
The two streak cameras will not be installed before August (waiting for the fast timing from RF). In the 2<sup>nd</sup> week of August the optical line of the streak camera will be installed. → **Action: Lars** is working on the software to control the streak measurements of the BTV upstream the plasma cell to extract the synchronization delay from the raw data.
- b. OTR: For the Hardware Commissioning end July only local controls will be used for the streak camera. The control/readout of the OTR streak camera is developed by BE-BI. The complete image of the OTR camera, internal delay

- from the streak camera settings needs to be logged. → **Action: Karl will contact Lars to specify the logging needs.** → **Action: BE-BI will implement it.** Note that no File Reader is required for the OTR readout.
- c. CTR: an external company will provide FESA classes to control the motors. → **Action: Misha to follow up the works with the company and contact Marine for integration issues when ready.**  
The measurement is integrated in FileReader system. → **Action: Misha needs to provide sample files to Veronica.** The scope of the CTR will be delivered in September only. CCD cameras are taken care of by STI. → **Action: STI.**
- d. Laser line: Valentin has prepared an excel table for the devices and parameters to be logged. → **Action: Marine to follow-up that names for variables have to be approved** (should follow SPS naming convention, but Valentine invented something).
- e. File reader: → **Action: Veronica will contact Marine for naming of FileReader device.**  
Post processing of the CTR measurements, Rb density measurement (Fabian) and laser will be done in the FileReader or the Data Concentrator: → **Action: Fabian and Misha need to prepare the post-processing algorithm and contact Veronica and Roman to have it implemented.**
- f. Plasma cell: → **Action: Falk, Enrique, Patric to follow-up control/readout of temperature sensors, oil pumps, etc...**
- g. Laser:
- i. the pulse length is read via the File reader. → **Action: Josh, Veronica**
  - ii. the energy meter will have a FESA class (from → **Action: EN-STI**)
  - iii. STI solution for cameras will be used for the 3 target images (→ **Action: EN-STI**)

All logging requests from the various EXPERIMENT systems should be collected and specified using the standard logging template, for consistency purpose and sent to the Logging Service ([acc-logging-support@cern.ch](mailto:acc-logging-support@cern.ch)). **Action: → Edda collects all logging requests from the experiment users.** → **Action Experiment users prepare the logging requests.**

### Next meeting

The next Secondary Beam Line Meeting will take place **28<sup>th</sup> June 2016 at 16:00 in 530-R-030.** A detailed agenda will be sent out in due time.

Janet Schmidt, Edda Gschwendtner, 31/05/2016