

Minutes of the 173rd EATM Meeting held on 13th August 2024

Minutes and slides available at <https://indico.cern.ch/event/1445507/>

Present: D. Banerjee (BE-EA, chair), C. Ahdida (HSE-RP), P. Arrutia (BE-ABT), J. Bernhard (BE-EA), L. M. Bueno (EP-UFT), F. Butin (BE-EA), F. D. Carvalho (BE-ASR), N. Charitonidis (BE-EA), H. Danielsson (EP-DT), O. Denisov (EP-UFT), J. Devine (EP-DI), M. V. Dijk (BE-EA), R. Folch (BE-EA), Y. Gaillard (SY-EPC), L. Gatignon (EP-UFT), Y. Kadi (BE-EA), N. Y. Kahn (BE-EA), V. Kyrgiannaki (BE-GM), D. Lazic (EP-UCM), M. Lazzaroni (BE-EA), J. Lehtinen (EN-CV), B. Maksiak (EP-SME), D. Mcfarlane (EN-AA), M. Mentink (EP-ADO), F. Metzger (BE-EA), L. Nevay (BE-EA), J. Nielsen (BE-OP), F. B. D. S. Pedrosa (EN-ACE), S. Pelletier (EN-HE), V. Poliakov (EP-UF), B. Rae (BE-EA), G. Romagnoli (BE-EA), A. Rummler (EP-ADO), I. A. Vaquero (EN-ACE), B. M. Veit (EP-UFT).

Action items (D. Banerjee) – Slides

J. Lehtinen reported that the ethernet sockets for the ATEX ventilation works are now installed and controls experts can plan the rest of the works.

Key information from Different Meetings

SBA Highlights (D. Banerjee) – Slides

An intervention to repair the broken XTDV in H8 is planned for the 27th and 28th of August. A retention roof is now planned to be installed over the electrical cabinets near NA61 in EHN1 to protect the equipment against possible further water leaks.

For the installation of an additional GTK in NA62n, **H. Danielsson** and **J. Bernhard** will prepare an ECR pending a decision to be taken on its installation in September. **G. Romagnoli** commented that a previous ECR on the existing installation is still pending, so either this should be first released and an ECR reflecting the change prepared, or a single ECR reflecting the original and additional GTKs prepared.

F. Butin reported that the AD magnetic horn still has some sparking. The voltage has been reduced, but issues remain. There will be no beam during the upcoming weekend for RP cooldown in advance of an intervention on Monday the 12th of August where the magnetic horn will be replaced.

C. Ahdida inquired as to the status of the document for the procedure for galleries access. **J. Bernhard** responded that we are waiting on feedback and final merging. Some already given feedback for simplification has been taken onboard and implemented.

ECRs (N. Kahn) – Slides

The status of the ECRs for information and future approval was summarised and the full list can be found in the slides. Two documents are presented for approval.

1) Installation of XCET Detectors and Scintillating Fibers Monitors in Neutrino Platform. **Approved.**

N. Charitonidis asked if the new door is not blocking the patrol path, which it was confirmed, no, it is not.

2) CESAR NA-CONS Renovation – Virtual Device Server Consolidation Plans. **Approved.**

Planning and Important Dates (B. Rae)

The YETS planning will be done in September and please send any known activities already for planning.

Rules and Workflow of TIOC (J. Nielsen) – Slides

The Technical Infrastructure (TI) team, based in the CCC, monitor electricity, cooling & ventilation, ODH, gas and fire detection etc. Their role is to monitor all alarms for all technical infrastructure at CERN; record ongoing works; provide on-call services; and coordinate intervention during major breakdowns. The service is always staffed 24/7 and every day of the year.

The planning dashboard from op-webtools was presented. This can be extended by various teams themselves and acts as a database of the relevant people for any given task or service at a given time.

Any intervention done by TI operator or requested equipment group is recorded in the “work order” tool. Each, by default, minor event can be upgraded to a TIOC event or a major event if required. There are approximately 4-5 thousand work orders by TI per year, of which approximately 25% are resolved by the TI operator on shift.

A major event is in the case of an accelerator, facility, or experiment being stopped. Going above this, it is classified as a crisis event and a crisis team is formed to manage it specifically. A major event is automatically linked to AFT and will automatically go into the TIOC meeting. The TIOC meeting follows the major events of the week and reviews and follows them up.

R. Folch asked if it is best-practice or required to involve TI for infrastructure related issues. **J. Nielsen** responded that yes, it is best to inform TI even if direct contact with the expert is made. As mentioned, the work order is also part of the necessary insurance steps and, separately, an event can be escalated more easily if required being already registered.

D. Banerjee asked if events are called in by users to the CCC if they are communicated to TI. **J. Nielsen** responded that no, not always but users should still contact the CCC TI or SPS island as applicable. It is up to TI / CCC operators to communicate effectively.

J. Devine asked that if it is acceptable that the new HSE guidelines will push users to contact the CCC for electrical issues. **J. Nielsen** confirmed yes, this is the best policy.

P4 XTAX Intervention and Next Steps (J. Bernhard) – Slides

Firstly, **J. Bernhard** gave thanks to all the teams involved and their quick intervention. Since 2018, several issues have been observed with the beam transport towards the T10 target. After most of these issues have been investigated and resolved, the beam size at T10 is as expected, however, the transmission is somewhat lower than expected.

Each XTAX is composed of 2 tables one after another along the beam direction that move independently. Each year, the P4 XTAX is scanned vertically to find the optimal transmission position and this was found to be different this year as in other years indicating a drift of the optimal position.

Endoscopic inspections were made through the holes in the XTAX, but nothing untoward was found. A toy MC by **L. Gatignon** shows that there should be a substantial horizontal offset between the XTAXs in P4 to account for the loss in transmission and implies a horizontal offset of 4.5.

During the YETS 23/24 as well as the recent TCC2 intervention for the H2 magnet replacement, photos were taken of the H6/H8 and P4 XTAX blocks. These showed the first P4 XTAX blocks are leaning against the H6/H8 ones. A current operational risk is that they get stuck; cannot move; and this blocks the operation of P42 and or H6/H8. Only the first upstream XTAXs in each line were found to be in contact.

A crisis team was formed on the 31st of July to determine how to proceed in a perhaps degraded level of operation. The first H6/H8 XTAX table was locked in the 80 mm aperture position. The access system and CESAR were updated accordingly to use the second table (downstream) only for access in H8.

After analysis of **R. Froschl** (HSE-RP) and **A. Herty** (BE DSO), it was deemed acceptable that a single XTAX for P42 in combination with the access bends would be sufficiently safe. The *POsurvey* software interlock was changed to act on the second XTAX table and not the first. Going forward NA62 can access normally and had only 20 hours of downtime.

C. Ahdida inquired that at the bridge in P42 there are still beam losses inducing radiation above the area classification limit and can these please be reduced for the beam dump run of NA62. **J. Bernhard** asked if the monitor calibrated is properly calibrated to which **C. Ahdida** responded yes. Also, it's the average value that's above the area classification limit.

SOX WG Mandate and Introduction (P. Arrutia) – Slides

Spill optimisation for experiments (SOX) is an action initiated and mandated by the IEFC. With a new dedicated experimental user (SHiP) joining the North Area, a coherent strategy is needed to deliver the desired flux and beam quality to the different CERN facilities for both protons and ions.

SOX along with the proton Sharing Across the Complex (pSAC) are two working groups from the Slow extraction working Group (SLAWG).

The strategy has been to document current and future proton-flux and spill quality bottlenecks and through this institute common terminology amongst the various ATS technical groups and the users. Key Performance Indicators (KPIs) are being defined that can be monitored by accelerator and experimental physicists. Defining these requires input and limitations were gathered. An example was presented for the RF structure in collaboration with NA62. The KPI determined was the fraction of saturated events, and this could be optimised.

B. Moritz Veit commented that AMBER would be happy to mirror their monitor screens to the control room if that would be wanted with their metrics.

D. Banerjee commented that in addition to checking the feasibility of options for delivering higher intensities in shorter spill durations such as parasitic T6 operation with the BDF/SHiP dedicated cycle, hardware limitations should also be considered e.g. the target limits.

L. Gatignon commented that the needs of NA62 are a little more immediate than that of SHiP for 2030 and noted that this has been part of the original motivation. Additionally, there has previously been spill quality information on SPS Page 1. **J. Bernhard** added that NA62's Beam Burst Quality (BBQ) is now published online in the accelerator control system.

Y. Kadi asked if the implementation strategy be on time for LS3, i.e. is everything proposed compatible with instrumentation as we are already in part of the NA-CONS? **D. Banerjee** responded that the working group report should be ready by the end of 2024.

News From Experiments

AMBER: B. Moritz Veit – preparation ongoing for the Drell Yan and PRM test at the end of the year. No modification needed in the platform for the TPC.

NA62: H. Danielsson – the main issue of the XTAX was as already discussed. The Beam Dump run is proceeding well and will continue until next week.

NA64: L. Molina Bueno – main issue is the 2nd MBPL magnet that has tripped repeatedly due to the cooling of the magnet. Several interventions have been made and it was identified it was the cooling system with blocked filters. Even after clearing these, the issues persisted. The maximum current is now limited to prevent overheating. There is a request to change the access procedure to move the target after switching off the access Bends, as otherwise the detectors trip when the targets move to air going through the step of the 500 mm Be. This will be changed in CESAR and it is planned to restart the CESAR server at 10:00 on Wednesday 14th of August.

NA61: B. Maksiak – [Slides](#) – From previous EATM several water leaks were presented. Pictures were shown of a damaged desk. Next year, there is a wish to collect proton-proton data with a liquid hydrogen target. It would follow a similar format to AMBER and follow their strategy in terms of installation and safety. A meeting was held with EP-Safety, DT-DI, and TE-CRG to the possible installation in NA61.

CLOUD: no report.

GIF++: P. Martinengo – no report.

IRRAD/CHARM: - offline report – Beam is stable and they constantly run ~20% above the weekly reference intensity. Two CV related issues (**A. Ebn Rahmoun** is already aware and following these):

- Weekend 3rd-4th of August: A blocked drainpipe caused the air-cooling unit to fill with water and the water cumulated on part of the ceiling of the CHARM preparation room. The weight of the water caused some ceiling panels to fall, consequently flooding some equipment. On Monday 5th of August, when the issue was found, EN/CV intervened rapidly to solve the problem. Minor impact on the downstairs IRRAD control room and, finally also no water damage was caused to CHARM equipment. It is planned that the ceiling panels will be replaced and the floor cleaned.
- The 1 m³ container used to collect the condensation of the CV system for the primary area (upstream T8 in the corridor outside the beam area) gets filled-up rapidly and needs to be empty often. This already created flooding in the outside IRRAD/CHARM area at the beginning of July as reported in a previous EATM. A more adapted long-term solution needs to be found for draining this condensation water. This is also planned for the YETS 24/25.

HiRadMat: N. Charitonidis – the HiRadMat week proceeded well but with some issues.

L. Nevay, 29th August 2024