Evian Session 2

Andrea Calia, Delphine Jacquet
LS2: opportunity to upgrade systems

System reliability, safety and performance improvement

LHC availability increase

LHC beam performance increase

More luminosity for the experiments
Reliability, safety improved

**MKI**: new fast interlock protection system for improved protection of the equipment

**TDI**: new design with 3 independent modules

**BEAM DUMP SYSTEMS**:

- **TDE** fully re-designed to overcome the vacuum problems encountered in Run 1&2 (dump-induced leaks due to the TDI vibrations).
- Beam dump entrance **vacuum window** more robust with significantly reduced time in case of replacement.
- **LBDS** system: upgrades of the MKD and MKB to significantly reduce the failure rate estimation. Increased reliability of the dilution process.

**Controls**: many changes to ensure maintainability and robustness of the control system at all levels (front-ends, GUI...)

**LHC Feedback**: more robust, easier to operate and maintain.

**Beam Instrumentation & RF**: hardware and software maintenance and consolidation
Performance improved

**Transfer line collimators** replaced to improve robustness to high brightness beam.

**New beam dump entrance windows** will now cope with high brightness beam.

Reduced e-cloud at the **MKI**

Significantly reduced time for **collimators** alignment

*Crystall collimators for a better collimation of high energy ions beams.*

Improved performance of the **ADT**: beam damping/excitation improved, more accurate measurements from the ObsBox
To be followed-up for Run 3

*Improve injection set-up time* could significantly reduce the turn around → collaboration with injectors on the topic

*No TDE spare* until mid 2023

Some issues on *Post Mortem* highlighted during the beam test

Missing data from BI on *XPOC* during the beam test and performance issues

Globally all systems are ready for Run3, even if extended by 1 year.