Evian Session 2

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LS2: opportunity to upgrade systems

System reliability, safety and performance improvement → **LHC availability increase**
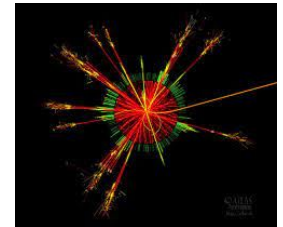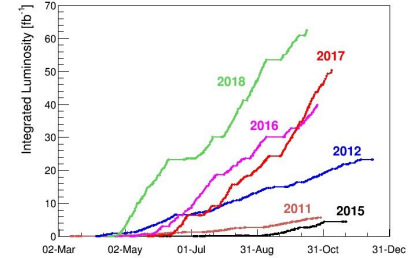
LHC beam performance increase → **More luminosity for the experiments**

Reliability, safety improved

MKI: new fast interlock protection system for a 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

Cristal 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.