LHC Injectors Upgrade

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Operating the injector complex after LS2

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o Keywords:

- operational and controls aspects, scheduling, physics concepts, timing system, forum, beam instrumentation, performance monitoring, optimisation algorithms/machine learning

o Points to be addressed and questions to be answered:

- Discuss requirements and ideas to improve and facilitate operation after LS2
  - Consider operational and controls aspects
- Discuss common scheduling strategies between injectors and LHC, including MDs to achieve LIU parameters.
- Define strategies for setting-up.
- Incorporation of physics concepts into the control system: where do we stand and what remains to be done?
  - Address settings management, improved LSA-tools interface, optics integration, ⋯
- Short and long-term improvements of the timing system (cycle and sequence management)
- Address the establishment of a common body/forum to align concepts and strategies among the injectors.
- Address the commissioning of beam instrumentation (wire scanners, ALPS, BGI, ⋯) including potential additional manpower requirements
- Discuss a common strategy across machines for follow-up and performance tracking
  - required tools, potential additional developments
- How can operation benefit from optimisation algorithms and machine learning tools?

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Session Classification: Session 3: LIU hardware and beam commissioning