**Title: Post LS1 25 ns and 50 ns options from the injectors**

**Authors**: Rende Steerenberg, Theodoros Argyropoulos, Hannes Bartosik, Thomas Bohl, Karel Cornelis, Heiko Damerau, Alan Findlay, Simone Gilardoni, Brennan Goddard, Steve Hancock, Klaus Hanke, Bettina Mikulec, Yannis Papaphilippou, Elena Shaposhnikova……

**Abstract:**

Pre-LS1, the parameters of the 50 ns and 25 ns LHC-type beams, in the LHC injector chain, have considerably improved with respect to their initial specifications. In addition significant, and rather successful, effort has gone into the development and testing of several alternative LHC beam production schemes in the injectors with the aim of providing high brightness beams to the LHC.

These schemes will be outlined together with their performance potential, possible challenges and additional requirements for their use by the LHC in the post-LS1 era.