



Review of the last workshop and Objectives for this one

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BGC Collaboration meeting – Liverpool University – 13 and 14 June 2019

Contents

- What we have achieved since the last collaboration meeting
- Milestones for CERN
 - Experimental programmes
 - Decision process for the project
- Objectives for this workshop

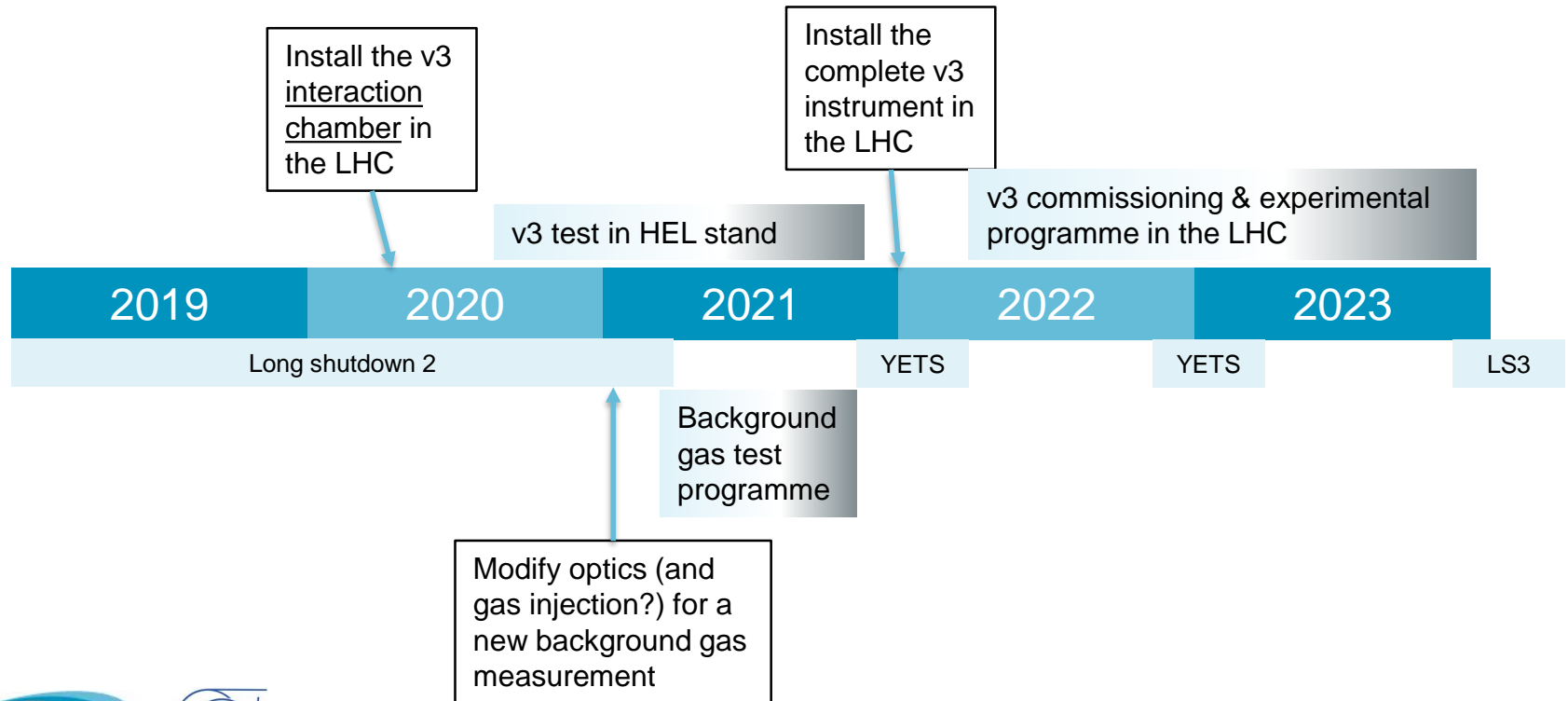
Actions and Status from the last meeting

- Experimental
 - Optimise the nozzle-skimmer distance and gas pressure
 - Good experimental work, but we are lacking simulation (again)
 - Build and test different nozzles and skimmers
 - Good tests with 50 um nozzle (20 um?)
 - Test different pumping configurations
 - Tests with reduced pumping speeds and combined backing pumps
 - Closer integration with CERN vacuum group is important
 - Measurements with argon
 - Can we decide in this meeting if Ar is candidate gas?
 - Test the CERN C-D nozzle
 - We need to make this happen!
 - Analyse the LHC fluorescence data for ions
 - Very promising news – we now have a motivation to carry-on post-LS2 with background gas tests

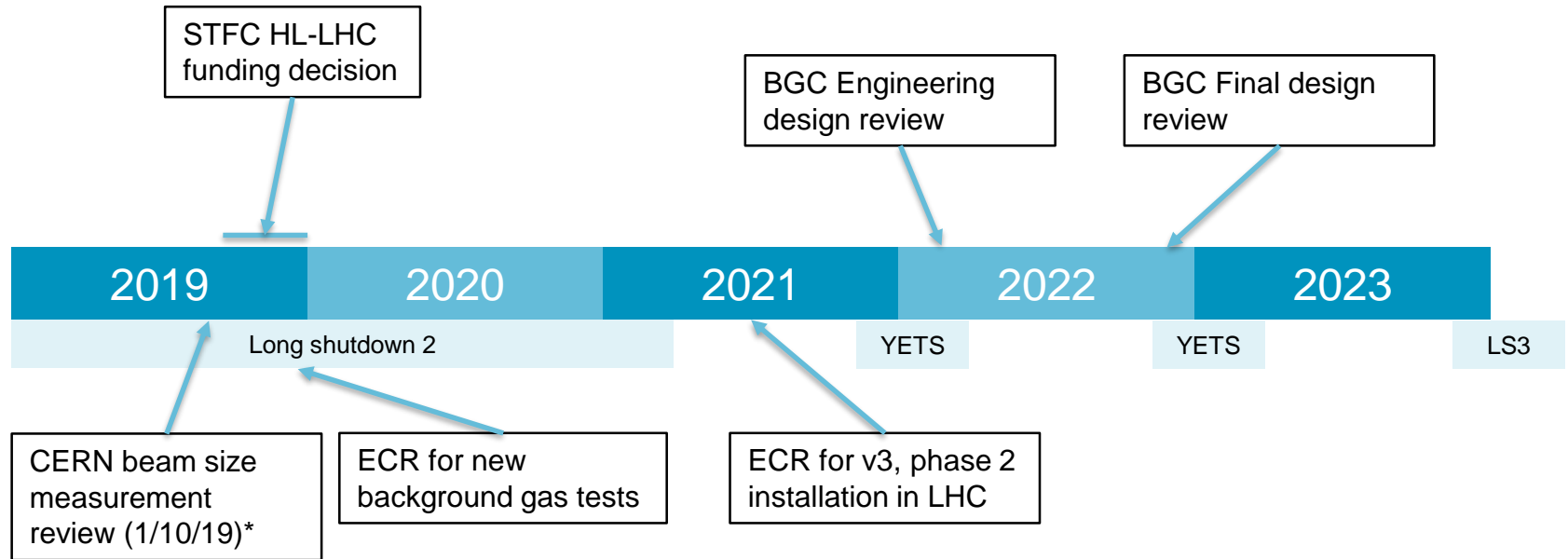
Actions and Status from the last meeting (2)

- Design
 - Make an integration in to the HEL and test stand
 - HEL integration going ahead. Beam 2 (QRL) side looks challenging...
 - Test stand integration?
 - Design the interaction chamber for the v3 instrument
 - Final production drawings are nearly complete
- Simulation
 - SR background in the LHC
 - Good work by Marton et al. has increased our understanding here.
 - Design of an optimum nozzle
 - Still lacking simulation expertise
 - Gas flow and cluster formation for argon
 - Still lacking simulation expertise

LHC experimental roadmap (my thoughts)



Version 3 decisions roadmap (my thoughts)



* Technical review of BSRT, BWS, BGV, BGI for the HL upgrade – specifications, synergies, options

Aims of this meeting

- Review and evaluate
 - Review status of “must haves” of the BGC V3 Stage 1
 - Summarise the know-how gained at Cockcroft, GSI and with the LHC fluorescence experiment since the last meeting at CERN November 2018. Identify the open issues with this knowledge gained with the aim of an operational instrument.
 - Review the administration progress (Planning, ECR done and in progress, Infrastructure requests, project funding, responsibility and boundaries)
 - Update on the status, requirements and compatibility with the HEL test stand including expected light yields for HEL test stand and HEL of the LS3 BGC
- Decide and plan
 - Agree on an experimental programme on the Cockcroft 2 test bench (v2) for 2019 end half to start 2020
 - Skimmer and Nozzles: Define optimum dimensions for the v3
 - Update on pumping and gauges and v3 control system
 - Evaluate realistic goals for the performance concerning precision and resolution
 - Programme and instrument requirements for a residual gas fluorescence test setup for Run 3

Summary

- Achieved most of what we set ourselves at the last collaboration meeting
 - Good progress with CI experiments, simulations and v3 design
 - Good collaboration with CERN vacuum group has been an important step forward
 - Missing the C-D nozzle test and expertise in high pressure simulations
- Two key technical/financial milestones in 2019
 - Important we continue to work together to prepare the case for this project
- Roadmap for experimental programme upto 2024
 - Should put us in a strong position to have a fully working instrument for the HEL at the HL-LHC start-up



Let's get started!!

Thanks to Tom for preparing and maintaining the action list these last months



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