

The modifications that have been made to the LHC RF system are presented. On the High Level side we have replaced a cryomodule (4 cavities, beam2) as the one originally installed could not operate reliably at the design voltage (2 MV); the upgrade of klystron collectors has been completed and new crowbar systems (solid state thyristors replacing the thyatrons) have been installed. On the Controls side all CPUs have been replaced and the new ones are now using Linux; the new FESA classes have been designed with FESA 3. The consequences of the increased beam current (0.55 A DC compared to 0.35 A in 2012), the increased energy, and the exotic bunch spacing (5-20 ns for the scrubbing beams) will be analyzed from an RF hardware point of view : required RF power, modifications to the klystron DC settings, operation of the phase loop with scrubbing beams. A tracking code is being developed to understand the effect of colored phase noise on the longitudinal bunch profile. The short-term benefits are the optimization of the blow-up and the possible shaping of bunch profile (flatter bunches) for heating or stability reasons. Upgraded bunch-by-bunch measurements (transverse and longitudinal) are being developed. A tentative planning for re-commissioning will be outlined, together with topics for the first RF MDs.