Draft, LL & EDL, 19/7/2021

**For CREMLINplus technical report, Task 5.4, July 2021**

One option for the Inner tracker of the SCT detector is the cylindrical -RWELL gaseous detector (C-RWELL). This development is carried out under the responsibility of groups from INFN-LNF (Frascati) and INFN-Ferrara, in collaboration with industry and CERN. The detector represents several technological challenges, such as the cylindrical geometry, openable detector, the spark protection (intrinsic to -RWELL), low mass and high position resolution. Over the first 18 months good progress has been made with the technology. The design of the first prototype in fully flexible geometry was completed and orders of its components have been placed. Assembly of the mechanical components and the electronic signal readout system is ongoing. The prototype is expected to be completed well in time for beam tests foreseen for 2022. In parallel significant progress has been made with the C-RWELL software tools such as the geometry description included in Aurora v 1.0.1, the simulation of energy deposition and detector response, and the digitisation ready to be merged in the official software. The next steps will focus on event reconstruction and analysis together with the full integration of the C-RWELL components in the full SCT Aurora software framework (see Task 5.3).