Release notes v 3.0.0.

1. **Geometry**

   - Added a new (5-section) ion pipe (HYBRID).
     This type of ion pipe is now installed by default for hybrid geometry. The material of the central part is beryllium, the lateral parts are aluminum. You can draw the ion pipe separately, as well as see its parameters by running the macro:
     macro/geom/build_pipe.C

   - A code has been added to ConstuctTsTB.C (for a tracker with a toroidal geometry) and ConstuctTsHB.C (for a tracker with hybrid geometry) macros that demonstrates how to get the location and numbering of individual straw layers for arbitrary geometry using SpdRoot tools.

2. **Generators (primary generators)**
   Significantly revised the contents of the directory **spdgenerators**.

   - The mechanism of event generation has been slightly modified. Updated the base class SpdPrimaryGenerator::FairPrimaryGenerator (this is a container class for the list of vertex generators, if several of them are used at once in MC). Now all primary generators in SpdRoot are objects of SpdGenerator :: FairGenerator.

   - In SpdPrimaryGenerator, all manipulations with the beam axis and the vertex from FairPrimaryGenerator are now available. For example, "smearing" coordinates along a given area or a global axis rotation. All settings are saved in the output file with the parameters (params.root) and can be fully restored later.

   - MC example test using a list of primary generators:
     macro/run/TestSimuPrimGen.C
     Note: In the macro, the substance is "switch off" to speed up, therefore the particles go through the setup without interaction, as can be seen with the standard macro for viewing tracks, DisplayTorEvent.C

   - Full information about the using generators (settings) is saved to a file with parameters (params.root). The list of generators can be restored exactly with all settings using the saved information **macro/analysis/RestoreSimu.C**

   - The mechanism of using the external Decayer is generalized.
     Added new classes SpdDecayer (decayer common type) and SpdPythia6Decayer. The list of particles for which the Decayer was used is saved in the output file in the object of SpdMCEventHeader. Decayer settings are also saved to a file with parameters

- Using the MC track number in the output array in the data file, you can get all the information about how particle was generated and which generator was used. (see, for example, demo **macro/analysis/CheckPrimData.C**)

- Quick view and check the contents of the output files:
  - **macro/analysis/CheckOutputParams.C (for params.root)**
  - **macro/analysis/CheckOutputData.C (for run*.root)**

- The existing generators have been updated and new ones have been added, including the vertex FTF generator, - SpdFTFGenerator.
  Test macros are in **macro/primgen**.

- Added the ability to generate events in ascii and root formats file for any generator of SpdGenerator type. The generator of SpdEvtBaseGenerator can be used to generate from files (see **macro/primgen TestEvtBaseGenerator.C**)

- Changes in output files:
  - Increased the amount of saved information in objects of SpdMCEventHeader type (these objects contain information about the event and are saved in a separate data file branch)
  - A new object is added in file with parameters, SpdPrimGenData.

- All the old macros are corrected and checked due to the latest updates.