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1. At present in G4MICE CVS repository a simplified Geant4 simulation exists with very poor definitions of the materials.

2. A much more detailed simulation exists but only in my computer because of bugs in Geant4 that make the simulation unstable (the process drops into an infinite loops). Committing of this code can compromise the whole G4MICE simulation.

Bugs found in Geant4 till now:

1. In the class G4EllipticalCone – according to the Geant4 team this bug has been fixed in the last release of Geant4 that is not included yet in G4MICE.

2. In the process (class) G4OpBoundaryProcess – infinite loop caused by an error in the class G4Sphere. The bug is temporally fixed by me.

3. A problem in the optical photon navigation caused by an infinite loop in the class G4SubtractionSolid. It is temporally fixed by me.

4. We can not expect to have a patch by the Geant4 team of problems 2 and 3 soon.

With the temporary patches of the problems 2 and 3 the simulation is now stable.

Possible solutions of the problem:

1. To include my changes of the original Geant4 code into the tarball file of G4MICE and to commit more detailed Ckov simulation.

   Advantages – the code of the simulation will be accessible for everyone.

   Disadvantages – the detailed Ckov simulation dramatically increase the computing time.

2. To run the detailed Ckov simulation (Geant4) independently and to include in G4MICE a simple code which will use a table with results calculated in that simulation.

   Advantages – the general simulation will run faster.

   Disadvantages – separate Geant4 version (patched one) has to be maintained for producing of the table.

3. To use something else (not Geant4) for the simulation of the Ckov detector and to use a table with results in G4MICE.

   Advantages – ????

   Disadvantages – ????