

# PR reviews in nexus

NEXT-100 geometry

1. Compile and run the tests.
2. Verify that there are no overlaps: in interactive mode, use `/geometry/test/run` command.
3. Verify the vertices: make geantine generations from each of the regions, and analyze the output files.
4. Verify that the volumes are correctly positioned: launch geantines in interactive mode from a specific location in a direction that crosses a series of volumes and verify that they are in the correct order.
5. Review the code: read the class from beginning to end, understanding what each line does and see if there is something that is not understood.
6. Review the code (cosmetics): that it complies with the guidelines of nexus (wiki), general style, efficiency.

### 3. Check the vertices.

#### test.init.mac

```
/PhysicsList/RegisterPhysics G4EmStandardPhysics_option4
/PhysicsList/RegisterPhysics G4DecayPhysics
/PhysicsList/RegisterPhysics G4RadioactiveDecayPhysics
/PhysicsList/RegisterPhysics NexusPhysics
/PhysicsList/RegisterPhysics G4StepLimiterPhysics

/nexus/RegisterGeometry Next100

/nexus/RegisterGenerator SingleParticleGenerator

/nexus/RegisterPersistencyManager PersistencyManager

/nexus/RegisterTrackingAction DefaultTrackingAction /nexus/
RegisterEventAction SaveAllEventAction /nexus/
RegisterRunAction DefaultRunAction

/nexus/RegisterMacro test.config.mac
```

#### test.config.mac

```
/Geometry/Next100/pressure 10. bar /
Geometry/Next100/elfield false

/Generator/SingleParticle/geantine particle
/Generator/SingleParticle/min_energy 1 eV
/Generator/SingleParticle/max_energy 1 eV
/Generator/SingleParticle/region BUBBLE_SEAL

/PhysicsList/Nexus/clustering false false
/PhysicsList/Nexus/drift
/PhysicsList/Nexus/electroluminescence false
/PhysicsList/Nexus/photoelectric false

/nexus/persistency/outputFile test

/process/em/verbose 0

/run/verbose 0 /
event/verbose 0 /
tracking/verbose 0
```

## 4. Verify that the volumes are correctly positioned

### test.init.mac

```
/PhysicsList/RegisterPhysics G4EmStandardPhysics_option4
/PhysicsList/RegisterPhysics G4DecayPhysics
/PhysicsList/RegisterPhysics G4RadioactiveDecayPhysics
/PhysicsList/RegisterPhysics NexusPhysics
/PhysicsList/RegisterPhysics G4StepLimiterPhysics

/nexus/RegisterGeometry Next100

/nexus/RegisterGenerator SingleParticleGenerator

/nexus/RegisterPersistencyManager PersistencyManager

/nexus/RegisterTrackingAction DefaultTrackingAction /nexus/
RegisterEventAction SaveAllEventAction /nexus/
RegisterRunAction DefaultRunAction

/nexus/RegisterMacro test.config.mac
```

### test.config.mac

```
##### VERBOSITY ##### /
run/verbose 1 /
event/verbose 0 /
tracking/verbose 1

##### GEOMETRY ##### /
Geometry/Next100/pressure 10. bar /Geometry/
Next100/elfield false

/Geometry/Next100/specific_vertex XYZ mm

##### GENERATOR #####
/Generator/SingleParticle/geantine particle
/Generator/SingleParticle/min_energy 1 eV
/Generator/SingleParticle/max_energy 1 eV
/Generator/SingleParticle/region AD_HOC
/Generator/SingleParticle/momentum XYZ

/PhysicsList/Nexus/clustering false
/PhysicsList/Nexus/drift false
/PhysicsList/Nexus/electroluminescence false
/PhysicsList/Nexus/photoelectric false

##### PERSISTENCY ##### /
nexus/persistency/outputFile test
```


