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# *oooo0000000000000000* #
# * * * #
# * GATE_v7.2 * #
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```

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# *-----* #
# * 02/15/2016 * #
# *-----* #
```

General set-up and installation:

- This version is validated for Geant4 10.2 and Geant4 10.1
- The compilation is validated for from gcc4.4 to gcc4.9
- It is no more needed to use system CLHEP. Geant4 embedded version now works (flag GATE_USE_SYSTEM_CLHEP=OFF by default). Alternatively, users may still use system CLHEP version 2.3.1.1 (put the flag ON).
- To download binary data for benchmark and example folders, set GATE_DOWNLOAD_BENCHMARKS_DATA and GATE_DOWNLOAD_EXAMPLES_DATA variables to ON.
- For GPU features the CUDA tools are needed (see doc).

All information regarding the installation are provided by the documentation:

Generic page:
<http://wiki.opengatecollaboration.org/index.php/InstallationGuideV7.2>

Cmake procedure:
http://wiki.opengatecollaboration.org/index.php/New_Compilation_Procedure_V7.2

GPU modules:
http://wiki.opengatecollaboration.org/index.php/New_Compilation_Procedure_V7.2#GPU_.26_CUDA_tools

New developments and features:

- GATE must use GEANT4 10.2, compiled without MT support

- New X-ray imaging Fixed Forced Detection (FFD) actor (analytic primary radiations / fixed forced variance reduction technique for scattered radiations). It requires RTK v1.2 (<http://www.openrtk.org>)
- New vpgTLE actor to compute prompt-gamma yield (10³ faster than conventional Monte-Carlo)
- Improve DoseActor (MassWeighting and buildAndDumpDensityImage option)
- Qt5 compatible (if Geant4 is linked with Qt5)
- Default material is now NIST Air
- IAEA phase space bug correction
- C++11 compatibility
- ImageActor now accepts any combination of two among Size, Voxel Size and Resolution
- Phase space: change branch names to reflect G4 names (CreatorProcess and DefinedStepProcess)
- Save a lot of memory in TPSPencilBeam
- Various bug fixes

Documentation updates:

Generic page:

http://www.opengatecollaboration.org/index.php/Main_Page

Dedicated wiki page:

http://wiki.opengatecollaboration.org/index.php/Users_Guide_V7.2

Examples:

- New X-ray imaging Fixed Forced Detection (FFD) actor:
PATH_TO/examples/example_CT/fixedForcedDetectionCT
- New vpgTLE actor:
PATH_TO/examples/example_vpgtle
- Improve DoseActor:
PATH_TO/examples/example_doseactor