

gate_v6.2 01/08/2012

About the general set-up:

- * This version is validated for Geant4 9.5.p01
- * The Compilation is validated with gcc4.6 / gcc4.5 / gcc4.4 / gcc4.3
- * Recommended CLHEP version : 2.1.1.0

- * **You must use CMAKE to compile GATE and Geant4**
- * **Minimal version for CMAKE : 2.6**
- * **All information regarding the installation are provided by the documentation:**
Generic page: <http://www.opengatecollaboration.org/InstallingGATE>
Dedicated procedure: http://wiki.opengatecollaboration.org/index.php/New_Compilation_ProcedureV6.2

- * The variable G4VERSION is removed

Important points related to the macro file modifications between gate_v6.2 and the previous versions:

- * Physical processes name: 'UHadron' move to 'Hadron'
- * 'MultipleScattering' effect is removed and should be replaced in your macro by 'eMultipleScattering' or 'hMultipleScattering'

- * NOTE : It is recommended to use Urban93Model with 'eMultipleScattering'

Bug corrected:

- * Ion sources management
- * Regular and Fictitious tracking in a voxelized geometry
- * SPECT blurring module corrected

New developments and capabilities:

- * Optical imaging package
For details, read the user's guide on the dedicated section:
http://wiki.opengatecollaboration.org/index.php/Users_Guide_V6.2:Generating_and_tracking_optical_photons

- * New Actor: mhd image format reader
http://wiki.opengatecollaboration.org/index.php/Users_Guide_V6.2:Readout_parameters_for_Radiotherapy_applications:Actors

- * New Actor: Cross Section Production (Carbon 11 and Oxygen 15)
http://wiki.opengatecollaboration.org/index.php/Users_Guide_V6.2:Readout_parameters_for_Radiotherapy_applications:Actors

- * New Actor: Electromagnetic Properties
http://wiki.opengatecollaboration.org/index.php/Users_Guide_V6.2:Readout_parameters_for_Radiotherapy_applications:Actors

- * SPECT feature: Store the septal penetration information
http://wiki.opengatecollaboration.org/index.php/Users_Guide_V6.2:Defining_a_system#SPECTHead

* *SPECT feature: Define an acquisition protocol with a multiple energy windows*
http://wiki.opengatecollaboration.org/index.php/Users_Guide_V6.2:Digitizer_and_readout_parameters#Energy_windows

* *New main program to use Gate as following:*

```
Gate [OPTION]... MACRO_FILE
-h, --help      print the help
-a, --param     set alias. format is '[alias1,value1] [alias2,value2] ...'
--d            use the DigiMode
--qt          use the Qt visualization mode
You can always use Gate as usual: Gate
Idle>control/execute MACRO_FILE
```

* *QT visualisation*

Chapter “Running Gate in a QT mode” in the following user’s guide section:
http://wiki.opengatecollaboration.org/index.php/Users_Guide_V6.2:How_to_run_Gate

* *Interfile Image format: The interfileReader supports both BIG ENDIAN and LITTLE ENDIAN byte order*

* *Muti-system approach and multi-coincidence sorter management*

For details, read the chapter “Multi-system approaches: how to use more than one system in one simulation set-up?” in the following user’s manual section:

http://wiki.opengatecollaboration.org/index.php/Users_Guide_V6.2:Digitizer_and_readout_parameters

* *Sinogram output: Available without the ecat7 library*

* *New physical process: Cerenkov effect available*

Documentation updates:

The documentation section on the website has been redesigned to be more convenient for users. A documentation for developer is under developments, LXR and Doxygen tools are available at the following links:

<http://www.opengatecollaboration.org/lxr/source>

<http://www.opengatecollaboration.org/Doxygen>

About the users guide:

Generic page: <http://www.opengatecollaboration.org/UsersGuide>

Dedicated wiki page: http://wiki.opengatecollaboration.org/index.php/Users_Guide_V6.2

Most important updates are listed here:

- * *Table of contents for each chapter*
- * *Actor section: description of 3 new actors*
- * *New SPECT options: Store the septal penetration and define acquisition with a multi energy windows*
- * *New important section for the ‘Optical Imaging’ module*
- * *New section for the multiple system option*
- * *Update of the ‘How To Run Gate’ section : Qt visualisation*

Benchmarks:

Tree benchmarks are available:

- *benchPET*
- *benchSPECT*
- *benchRT*

It is highly recommended to execute all benchmarks to qualify your Gate installation.

Examples

- * *Radiotherapy: 10 examples which are described in the file
\$GATEHOME/examples/example_Radiotherapy/ListOfExamples.txt*
- * *Optical Imaging: How to define a simulation with Gate using bioluminescence or
fluorescence probes. Details are available in this file:
\$GATEHOME/examples/example_OPTICAL/README*