

Geant4 Task Force for R&Ds

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Mandate

- promote and survey research activities on potential **software architectural revisions of Geant4**
- promote and survey research activities on the exploitation of **emerging technologies or computing architectures** that would be beneficial to Geant4
- ensure the **visibility** that the collaboration is open to such explorations and act as the focal point **for such activities inside and outside of collaboration**
- where appropriate, conduct **benchmarking comparison** and provide/assist **communication/support** among R&D activities
- make timely assessment **reports to the SB** with solid **proof of benefits**
- based on assessments of this Task Force, once a concrete architectural revision is identified, the **SB creates another dedicated task force** to create workflow, estimate required resources and drive that particular development for integration into the code base.

Functioning

- the term of this Task Force is "regular-ongoing"
- anyone in the Geant4 Collaboration may volunteer to be a member of this Task Force
- the chair of the Task Force is appointed by the SB
- the Task Force communicates with research activities inside or outside the Geant4 Collaboration
- the Task Force maintains its web page(s) that should be publicly visible

Organization

Working Groups pages

- Run,Event, and Detector Response
- Tracking
- Particles and Track
- Geometry and Transport
- Generic Processes and Materials
- Electromagnetic Physics
- Low Energy Electromagnetic Physics
- Hadronic Physics
- Persistency
- User and Category Interfaces
- Visualization
- Physics Lists and Validation Tools
- Testing and Quality Assurance
- Software Management
- Documentation Management
- Novice & Extended Examples
- Advanced Examples

Task Forces

- Task Force for R&Ds

- Chair: Witek Pokorski
- Deputy: Jonathan Madsen



Task Force for R&Ds

The role of Task Force for R&Ds is to

- Promote longer-term R&D efforts on the exploitation of emerging technologies, computing architectures or software architectural revisions, and new or better physics ideas that would be beneficial to Geant4.
- Make timely assessments on these R&Ds for their feasibility, benefits and required efforts.

The activity of the Task Force is starting now with a series of 'brainstorming meetings' where different ideas and ongoing projects will be discussed. Those meetings are open to the public and contributions are welcome ☺.

- <https://indico.cern.ch/event/809383/> ☞

Modus operandi

- brainstorming meetings, collecting ideas, topics, ongoing projects
 - we welcome all contributions
- form groups to assess and prepare concrete proposals for specific R&Ds
 - document all the activity on the web page
- quick prototypes to demonstrate feasibility and benefits
 - prepare documents for Geant4 SB for endorsement

Meetings

- open to everyone
- all presentation on ideas/project very welcome
- we do it like for the Geant4 Steering Board
 - change between 8h, 16h, 24h (CERN)
 - not more often than once every 4 weeks

Conclusion

- new Task Force plays two main roles
 - make R&Ds within Geant4 more visible to the users
 - more feedback, more direct contributions?
 - bridge the gap between 'outside' R&Ds and Geant4 development
 - help and encourage users to contribute to the development of Geant4
- looking forward to a lot of interesting new developments
 - demonstrating concrete benefits will make them successful