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A Virtual Geant4 Environment

We describe the development of an environment for Geant4 consisting of the application and data that enables users a faster and easier way to access the Geant4 applications without having to download and build the software locally. The environment is platform neutral and offers the users near-real time performance. The environment consists of data and Geant4 libraries built using the LLVM tools which can then result in bitcode that can be embedded in HTML and accessed via the browser. The bitcode is downloaded to the local machine via the browser and can then be configured by the user.

This approach provides a way of minimising the risk of leaking potentially sensitive data used to construct the Geant4 model and has application in the medical domain for treatment planning.

We describe several applications that have used this approach and describe the performance of applications built with this approach compared to native applications. We also describe potential user communities that could benefit from this approach.

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