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Progress of the Development of the ELI-NP GBS High Level Applications

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The Gamma Beam system (GBS) is a high brightness LINAC to be installed in Magurele (Bucharest) at the ELI-NP (Extreme Light Infrastructure - Nuclear Physics) newly build laboratory. The accelerated electrons, with energies ranging from 280 to 720 MeV, will be made to collide with a high power laser to produce tunable high energy photons (0.2 MeV-20MeV) with high intensity (1013 photons/s), high brilliance and spectral purity (0.1 %BW), through the Compton backscattering process. This light source facility will be open to users for nuclear photonics and nuclear physics advanced experiments. Tested high level applications will play a key role in commissioning an operation. In this paper we report the progress made and the status of the development of the dedicated high level applications. We also report on the measurements to test on the FERMI LINAC of the beam-based alignment method for correcting residual dispersion, which would spoil machine performance.

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