HR0011SB20254-13
Pulsed High-power Laser Accelerators to Study radiation Hardening (PHLASH)
Frequently Asked Questions (FAQs)

1. We note that the prerequisite preliminary design is for 100MeV, but the aim of the program is to demonstrate 50MeV. Is this correct or are both meant to be the same, and if so, 50 or 100 MeV?
   A: The reference to a preliminary design of a 100 MeV design is mentioned in the Phase I description. As this is a direct to Phase II solicitation, proposers must demonstrate that a "Preliminary design, with schematics, of a compact 100MeV, >100Hz repetition rate, LWFA system showing all required components and their specifications" has been achieved in order to submit a proposal. The solicitation asks for a 50MeV physical prototype, not just a preliminary design.

2. For **50 MeV electron beam prototypes**, what beam quality thresholds (emittance, energy spread) are required to be equivalent to heavy-ion SEE surrogates?
   A: For the 50 MeV beam there are no requirements in the SBIR for beam emittance at present. That being said, monochromaticity is a trait that benefits single event effect testing, and successful performers will demonstrate a path towards a monochromatic beam.

3. Regarding **gas target design**, does DARPA require continuous-flow plasma targets for 1 kHz operation, or are pulsed/refreshable cell-based targets acceptable in Phase II?
   A: There is no requirement on the plasma targets, solely the capability of 1-kHz operation.

4. For footprint constraints (<250 m^3), is there a **maximum optical path length per stage** DARPA expects for LWFA scalability to 100 GeV?
   A: There is no maximum optical path length.