

Attachment A: Technology Readiness Levels (TRL)

TRL 1

Basic Research: Initial scientific research has been conducted. Principles are qualitatively postulated and observed. Focus is on new discovery rather than applications.

TRL 2

Applied Research: Initial practical applications are identified. Potential of material or process to solve a problem, satisfy a need, or find application is confirmed.

TRL 3

Critical Function or Proof of Concept Established: Applied research advances and early stage development begins. Studies and laboratory measurements validate analytical predictions of separate elements of the technology.

TRL 4

Lab Testing/Validation of Alpha Prototype Component/Process: Design, development and lab testing of components/processes. Results provide evidence that performance targets may be attainable based on projected or modeled systems.

TRL 5

Laboratory Testing of Integrated/Semi-Integrated System: System Component and/or process validation is achieved in a relevant environment.

TRL 6

Prototype System Verified: System/process prototype demonstration in an operational environment (beta prototype system level).

TRL 7

Integrated Pilot System Demonstrated: System/process prototype demonstration in an operational environment (integrated pilot system level).

TRL 8

System Incorporated in Commercial Design: Actual system/process completed and qualified through test and demonstration (pre-commercial demonstration).

TRL 9

System Proven and Ready for Full Commercial Deployment: Actual system proven through successful operations in operating environment, and ready for full commercial deployment.