

DOD DESKBOOK 5000.2-R

APPENDIX 6
TECHNOLOGY READINESS LEVELS AND THEIR DEFINITIONS

AP1.1. TECHNOLOGY READINESS LEVELS

The following matrix lists the various technology readiness levels and descriptions from a systems approach for both HARDWARE and SOFTWARE. DoD Components may provide additional clarifications for Software. Supplemental definitions follow the table.

Technology Readiness Level	Description
1. Basic principles observed and reported.	Lowest level of technology readiness. Scientific research begins to be translated into applied research and development. Examples might include paper studies of a technology's basic properties.
2. Technology concept and/or application formulated.	Invention begins. Once basic principles are observed, practical applications can be invented. Applications are speculative and there may be no proof or detailed analysis to support the assumptions. Examples are limited to analytic studies.
3. Analytical and experimental critical function and/or characteristic proof of concept.	Active research and development is initiated. This includes analytical studies and laboratory studies to physically validate analytical predictions of separate elements of the technology. Examples include components that are not yet integrated or representative.
4. Component and/or breadboard validation in laboratory environment.	Basic technological components are integrated to establish that they will work together. This is relatively "low fidelity" compared to the eventual system. Examples include integration of "ad hoc" hardware in the laboratory.
5. Component and/or breadboard validation in	Fidelity of breadboard technology increases