

Constraint Management Pathfinder RFI

Technology Readiness Level Description

(Attachment 1)

Relative Level of Technology Development	TRL	TRL Definition	Description
System Operations	9	Actual system operated over the full range of conditions	Actual operation of the technology in its final form, under the full range of operating conditions. Integrated into operational system and processes.
	8	Actual system completed and qualified through test and demonstration	Technology has been proven to work in its final form under expected conditions. Examples include developmental testing and the evaluation of the system in an operational environment.
System Commissioning	7	Full-scale, similar (prototypical) system demonstrated in a relevant environment	Prototype full scale system. Represents a major step up from TRL 6, requiring demonstration of an actual system prototype in a relevant environment. Examples include testing the prototype using real system inputs.
	6	Engineering/pilot-scale, similar (prototypical) system validation in a relevant environment	Representative engineering scale model or prototype system, which is well beyond the lab scale tested for TRL 5, is tested in a relevant environment.
Technology Demonstration	5	Laboratory scale, similar system validation in a relevant environment	Integration and testing of basic technology components in a lab scale environment.
	4	Component and/or system validation in a laboratory environment	Basic technology components are integrated to establish that the pieces will work together. TRL 4 is the first step in determining whether the individual components will work together as a system.
Technology Development	3	Analytical and experimental critical function and/or characteristic proof of concept	Active research and development is initiated. At TRL 3 the work has moved beyond the paper phase to experimental stage that verifies the initial concepts.
	2	Technology concept and/or application formulated	Once basic principles are identified, practical applications can be invented. The step up from TRL 1 to TRL 2 moves the ideas from pure to applied research.
Research to Prove Feasibility			

Basic Technology Research	1	Basic principles observed and reported	Lowest level of technology readiness. Identification of principles that underlie the technology in published research or other references.
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Adapted from Table 4 of DOE G 413.3-4A, Technology Readiness Assessment Guide,
<https://www.directives.doe.gov/directives-documents/400-series/0413.3-EGuide-04a/@@images/file>