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TECHNOLOGY READINESS LEVELS... IN PRACTICE

**Abstract**

The Technology Readiness Levels (TRLs) are becoming an increasingly popular tool for technology readiness assessments to inform management and support decisions as to whether or not to embark a given technology in a space project.

In this context, therefore, the TRLs are intended to be a standard, discipline independent (ideally analytical) measure of the maturity of a technology. However, the TRL are defined in terms of text, and text is subject to interpretation. Significant work is, in fact, currently in progress worldwide to reach an “agreed” standard definition.

As a contribution to this ongoing work, this paper describes in details the use of TRLs to follow the real life development of three different technologies, namely:

1. Inductive microwave filters
2. GaAs photovoltaic assembly
3. Tuneable frequency converters

The examples chosen cover different aspects such as new theoretical developments, error or malfunction identification and correction, and critical mission requirements. All examples discussed are extracted from real technology development cases that resulted in flight hardware.

In addition to technology developments description and evaluation, the subjects of technology reuse and in-orbit demonstration are also discussed.