
An approach to reliability demonstration test for a system from accelerated tests on unit components : case of a series system with Weibull law

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Abstract: Reliability demonstration is often a necessity for industriels how need to prove the quality for their production. When the objective of reliability is situated at the level of the global system, the simple use of the mathematical norms for the reliability demonstration of each subsystem must be seen again to insert each test into the system. It is often to need a reliability around 0.999 on every subsystem to guarantee that reliability system exceeds 0.8 (on given time). We propose an approach to determine the time of test allowing to validate that the reliability of a serial system (defined in term of probability quantile) is greater than an objective value, from k accelerated tests on components by avoiding the method, too much conservative, of the product of confidence levels .