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C3Or4C-03: Reliability approach for high-availability cryocoolers

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Reliability is a major driver in design decisions for the products of Thales Cryogenics. In the past years Thales Cryogenics has put their attention to the High-Availability 24/7 application of cryocoolers in combination with detectors. Several technical decisions have been aimed at the improvement in increased availability. This paper highlights an updated approach of Thales Cryogenics to Reliability, with regards to Availability and how it relates to Weibull analysis and MTTF. Summarized in a whitepaper, with the usage of field- and lifetime data, and a specific set of failure modes and mechanisms. Furthermore an updated overview of the Thales product portfolio with respect to reliability numbers will be provided. As well as the statistical approach that was undertaken to reach these reliability results.

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