RTIMS enables in-flight reconfigurability by using SRAM (static random access memory)-based FPGA technology.

The design overcomes both hardware and software errors that may be detected after launch during mission operations. This reduces overall mission risk, which is increasingly important as flight system development times and budgets decrease. It also allows RTIMS to adapt to changing mission conditions.

The design increases system reliability by distributing the radiation mitigation structure to each component instead of to a single point failure at the system level. The mitigation techniques significantly simplify system design. RTIMS is well suited for deployment in real-time data processing, reconfigurable computing, and memory-intensive applications.

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