Desired State
Current State
Project Goals and Key Deliverables
Key Constraints

The current ready-to-use space-qualified precision timekeeping devices available cost hundreds to millions of dollars.

The goal of this project is to design and build a derivative Time Card that meets the form-factor and environmental constraints of a CubeSat that is a low-cost alternative. It must have comparable performance under $10k.

The functional prototype must meet drift requirements with statistically significant confidence and it must be an open source design. Additionally, the size, weight, and power characteristics must be compatible with 12U cubesat or smaller and operational characteristics compliant with NASA LunaNet Standard. The timekeeping drift must be less than 30 nanoseconds per Earth day. The atomic clock must survive deep space conditions for at least 10 years and widely interoperable with existing spacecraft systems.

Source: EduSource Information