

A PROPOSED TIME CODE STANDARD FOR TELEMETRY AND SPACE APPLICATIONS



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ABSTRACT

A computer oriented time code designed for users with various timing requirements is proposed. Its format meets with the packet data format requirement of the new data handling and management concept, known as the NASA End-to-End Data System (NEEDS). It is equally applicable to spacecraft and ground users. The time code is arranged in parallel groups of binary numbers containing day, second, millisecond, microsecond, and nanosecond resolutions. The day count system is a four digit number truncated from Julian day numbers known as Truncated Julian Day (TJD). It has a repetition period of 27.379 years.

Four options of resolutions in seconds, milliseconds, microseconds, and nanoseconds are offered. They are formatted in 4, 6, 7, and 8, eight-bit Byte words, respectively. To identify each resolution option of the time code, a variable prefix code consisting of 1 to 3 bits is used.

This paper will present in detail the time code and its applications.