Telemetry Database Files

The telemetry database defines how to decode, transform, and interpret the various telemetry values contained in an instrument's packets.

Telemetry Database Fields

Field	Required	Description
SUB_SYSTEM	Yes	The sub system that the telemetry value comes from
NAME	Yes	The name of the telemetry value
DESCRIPTION	Yes	A description of the telemetry value. Useful if the name is non-descriptive.
ADC #	Yes	Deprecated but still required right now, use 0 as the value
DATA_ID	Yes	The telemetry value's unique identifier
PACKET_TYPE	Yes	The type/APID of the packet that contains the telemetry value
PACKET_SUBTYPE	Yes	Deprecated but still required right now, use 0 as the value
DECODE_TYPE	Yes	The decode type, which dictates how the value is decoded, and also how decode ID 1-4 are used
DECODE_ID1	Yes	The purpose of these depends on the decode type
RAW_FMT	Yes	How to format/display an unconverted telemetry value, i.e. the raw bits/bytes in the packet. Follows the C style printf formatting
ENG_FMT	Yes	How to format/display a telemetry value converted to its engineering representation. Follows the C style printf formatting
ENG_EQ_TYPE	Yes	The type of engineering transformation to apply to the raw value, and also dictates how the ENG_K1-ENG_K2 are used
ENG_K1	Yes	Their usage depends on the ENG_EQ_TYPE, but is usually the coefficients of a 1st order polynomial. K1 = constant, K2 = coefficient of first order
SCI_UNITS	Yes	The units of the science transformation
SCI_FMT	Yes	How to format/display a telemetry value converted to its science representation
SCI_EQ_TYPE	Yes	The type of science transformation to apply to the raw value, and also dictates how the SCI_K1-SCI_K8 are used

Field	Required	Description
SCI_FROM_ENG	Yes	If Y, then engineering transformation is applied to the raw value before science transformation. Otherwise, if N, then science transformation is applied directly to the raw value.
SCI_K1	Yes	Values used in the science transformation. How they are used is determined by the SCI_EQ_TYPE.
DISCRETE_LABELS	No	Allows user to define a mapping of raw values to textual labels
MUX_CH	Yes	Deprecated but still required right now, use 0 as the value
LIMIT_TYPE_1	Yes	The type of the first limit check
YELLOW_LIMIT_1	Yes	The first limit check's yellow limit
RED_LIMIT_1	Yes	The first limit check's red limit
LIMIT_TYPE_2	Yes	The type of the second limit check
YELLOW_LIMIT_2	Yes	The second limit check's yellow limit
RED_LIMIT_2	Yes	The second limit check's red limit
EXTRA_1	Yes	An extra field that is used for various purposes.

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