University of Michigan
Space Physics Research Laboratory

TIDI Data Processing Software	CAGE No.	0TK63
	Drawing No.	055-3536A
Event Log File Format	Project	TIDI
	Contract No.	NASW-5-5049
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REVISION RECORD

Rev	Description	Date	Approval
	Initial Release	19 Dec 1997	
A	Post requirements review revisions	13 Feb 1998	

APPROVAL RECORD

Function	Name	Signature	Date
Originator	D. Gell		
Flight Software	S. Musko		
Instrument Scientist	W. Skinner		
Program Manager	C. Edmonson		
Systems Engineer			
R&QA	John Eder		

1. References

1) Gell, David "Downlink Software Development Plan", SPRL File 055-3439, 29 July 1997

2) APL, *Timed General Instrument Interface Specification (GIIS)*, APL File 7363-9050, 1 Oct 1997

2. Introduction

The TIDI Event Log File is an output product of the event logger element (reference 1) of the TIDI data processing system. It is a detailed list of significant events found within the data stored in one TIDI Level 0 file.

3. File Organization and Contents

The Event Log File consists of a series of ASCII records, separated by the new-line character. The first several records form the file header, defined in Table 1, and the remaining records contain event data. The format of the data records is defined in Table 2

Table 1, Header Contents

record	*description*
1	File Format Version ID
2	TIDI Level 0 Source File Name
3	Event Log File Name
4	Creation Time Stamp
5	Creating Program
6	Creation Node
7	Creation Command

The file version identifier is intended to match the file with the reading program or library. It is to be changed whenever a new release of the reading software is required. The third field contains the name of the event log file. The creation timestamp is the time of the file creation in the TIMED standard ASCII format with fractional seconds omitted. Record 5 contains the fully qualified path name of the program run to create the file. Record 6 contains the name of the data processing system node on which the program was run. The final item records the command used to invoke the file creation process.

Event records consist of several fields, separated by the ASCII tab character. Records are separated by the ASCII end-of-line character.

Table 2, Event Record Format

field	*name*	*description*
1	time	UT at which the event occurred
2	event class	M, E, or A (mode change, event, or anomaly)
3	event type	Type of event
4	identifier	Name of event, either a TM point or Table ID
5	supplement	Additional information depending on the type of event

The event record consists of 5 fields. The first is the time at which the event occurred, represented using the TIMED standard ASCII format, including fractional seconds, as shown below:

yyyydoyhhmmss.ff

where "yyyy" is the year, "doy" is the day of the year, "hhmmss" is the time of day in hours minutes and seconds, and "ff" is the fractional part of the second (hundredths of a second).

The next field, event class indicates to which of the 3 types of events defined for the TIMED project by the GIIS (reference 2) the event belongs. Field 3 specifies the type of event. Event types applicable to TIDI , including those predefined by reference 2, are listed in Table 3. Event types can be qualified by "BEGIN" or "END" as appropriate

Table 3, Event Types

class	*type*	*qualifiers*	*meaning*
E	`CAL`	`BEGIN END`	non-routine calibration
E	`COOP`	`BEGIN END`	cooperative measurement
A	`SHUTDOWN`		TIDI shutdown
A	`DATA LOSS`	`BEGIN END`	significant data lost
A	`DATA WARN`	`BEGIN END`	Data quality is suspect
A	`BAD CONFIG`	`BEGIN END`	instrument improperly configured
A	`RED LIMIT`		a telemetry point has exceeded its red limit
A	`YELLOW LIMIT`		a telemetry point has exceeded it yellow limit
E	`GREEN LIMIT`		a telemetry point has returned to its normal range after having exceeded a red or yellow limit
M	`TABLE`		A new table is in control of the instrument

For event type `CAL`, the identifier field may contain the type of non-routine calibration performed, and the supplement field is unused.

For event type `COOP`, the identifier field contains the name of the correlative measurement site, and the supplement field contains the type of measurement performed there.

For event types `DATA LOSS`, `DATA WARN`, and `BAD CONFIG` the identifier field is unused and the supplement field may contain additional description of the cause of the event.

For event types `RED LIMIT`, `YELLOW LIMIT` and `GREEN LIMIT`, the identifier field of the event record contains the name of the telemetry point for which the even occurred. The supplement field contains the value of the TM point and the value of the limit that was exceeded.

For event type `TABLE`, the identifier field contains the identifier of the table controlling the instrument and the supplement field is unused.

4. Naming Convention

Event files are named based on the name of the Level 0 file from which they were created. The event file name if formed by appending the string ".ELO" to the name of the input file, after first removing the string ".TL0" if present.