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A Programmer's Reference Guide to FDMS File Formats

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Fire Data Management System, FDMS, is a computer database specifically designed to store and retrieve fire test results. This guide provides detailed descriptions of the current, beta version, file formats as well as revisions planned for the immediate future.

Key words: computer database; Cone Calorimeter; export; Furniture Calorimeter; import; LIFT apparatus; room/corner test; scalar data; vector data

1. Introduction

A unified method of accessing data is crucial to both experimental and modeling efforts in the development of the science of fire. FDMS, the Fire Data Management System[1][1], is a computer database for organizing and presenting fire data obtained from small-scale and large-scale tests as well as fire simulation programs. By storing available fire test values in a common format, this data is readily available to computer models, plotting programs, and report generators.

The goal for FDMS is to provide a centralized database of test values generated from a variety of sources within the fire community. Such a database could be accessed through communications networks providing all participants with immediate access to new results. The FDMS concept should not be limited by computer platforms, computer languages, or data inflexibilities. Development of this centralized FDMS database involves four stages and the release of two versions of the software program.

The initial stage of development provides a beta version software program which can be used transitionally to store results and to exchange test values between participants. A beta version of the FDMS software currently exists[2] which provides this functionality. One goal of this FDMS beta version is the generation of feedback from the user community. The later, centralized version of the FDMS software must provide an open file design that will easily accommodate future test apparatus formats. All file formats and program functionality provided in the beta version will be supported in the later version along with appropriate user

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[1] Numbers in brackets refer to literature references listed in Section 7 at the end of this report.

recommended additions. Consequently, user response is critical to the successful design of the centralized FDMS database.

This reference guide is intended to address the second stage of development by providing details of the FDMS beta version internal file formats. This includes database files as well as import and export formats. These formats are detailed to assist model developers in accessing test data in the FDMS beta version and in verifying that all data required by their models is available. The later, centralized version of FDMS will include all test apparatus available in the beta version, all test apparatus detailed in the original design of FDMS[3], and appropriate recommended additions and modifications. Response from model developers is critical to the successful design of the centralized FDMS database file formats.

A second version of the FDMS software will be developed and released in the third stage of development by incorporating feedback from the FDMS beta version users and model developers. The new version must minimally support the functionality and data details of the beta version and provide a new user interface that is independent of computer platform.

In the final stage, the centralized database will be generated using data provided from each of the existing individual databases. Once the database has been generated, access through communication networks will be provided. Data from the central database can be accessed at user locations or downloaded for access in individual FDMS software programs.

The results of the file format evaluations for the beta version of FDMS have been divided into four sections in this reference. Section 2 covers database file formats as they presently exist. Section 3 presents additional modifications which must be made to the FDMS beta version in order to accommodate existing fire models. The modifications recommended in Section 3 are results of an early evaluation and have not been finalized. Feedback to these suggested modifications is encouraged. Sections 4 and 5 provide details for the import formats supported by the beta version of FDMS.

This reference is not intended to provide instructions on the use of the FDMS beta version. Operation details are available in the FDMS user's guide and technical documentation [2, 3]. Some experience with computer databases and database concepts is assumed throughout the remainder of this reference guide.

2. FDMS Beta Version File Formats

The FDMS beta version software stores scalar and vector fire test values. Each scalar data field allows entry of at most one value for each test run. Scalar data is stored within the FDMS database. Examples of scalar data include the test operator's name, the date of the test, and the time to ignition of the sample. Vector data is stored in external ASCII files as columns of numbers. Each value in the column is dependent on a corresponding value within a second set of vector data. The rate of heat release is an example of vector data. The

corresponding set of vector values in this case would be the times at which the rate of heat release was measured and recorded.

Database files for the beta version of FDMS can be categorized as either main test apparatus files or secondary files providing supplementary information. Examples of supplementary information include participating organizations, personnel contacts, and product manufacturing details. Data tables have been defined within the FDMS system for a large number of commonly used fire tests. The beta version software fully implements only those for the Cone Calorimeter, Furniture Calorimeter, and the fire-resistance table[4]. This reference section provides technical details for the internal format of these main test files and all secondary files.

Fields within the database files are categorized according to the type of values entered. **String$** fields allow entry of numbers, letters, and special characters from a standard computer keyboard. **UCase$** and **Numeric$** are special types of **String$** fields. **UCase$** converts all letters entered to upper case before storing while **Numeric$** allows only numbers and numeric symbols. **Single!** fields store single-precision floating point numbers. **Integer%** stores integer values which may be updated later by arithmetic calculations. **Date** fields store formatted date values as the month, day, year format (MM/DD/YY). **Logical** fields allow entry for one of two possible values. Examples of **Logical** field values are Y or N (yes or no), and H or V (horizontal or vertical). **Choice** fields are similar to logical fields except that values are selected from a predefined set. For an example of a **Choice** field, refer to the **IGNTYPE** field in Section 6. **Relational** fields allow entry of any value found in a corresponding field of a secondary file. The concept is similar to the **Choice** field but is limited to existing values entered in the related file by the FDMS user.

The internal structure of each file is presented in this section by comparing the existing format to the original design specifications. Any variations are highlighted. The original specifications can be found in the FDMS technical documentation [2, 3]. Each format specification details file offsets to provide model developers direct access to the stored values without restricting development to the language and database engine used in the existing version of FDMS. Variations in screen format or display format are included so that developers generating import and export files can support the same numeric precision. Highlighted field name changes indicate the need for corresponding adjustments in files generated in the FDMS import format. The field name as it exists in the existing beta version is highlighted in the field name column with the previous name displayed to the right. New fields are indicated with a *** NEW *** to the right of the specification line.

A field description section is provided in Section 6 to minimize the need to refer to the original FDMS document. The field definitions are identical in both documents.

REMINDER: *Highlighting throughout this section indicates modifications to the original FDMS file format that have been implemented in the beta version of FDMS.*

2.1 CONE

The HF field originally allocated to hydrogen fluoride measurements was reallocated to total unburned hydrocarbons, TUH, to conform to current usage in laboratories.

CONE: 95 fields, record length = 929

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	LABID	Relational	8	ORGANISE	1	
2	10	FILE	String$	8			
3	18	RECEIVED	Date	10			*** NEW ***
4	20	PRIVATE	Choice	10	-CIRCUL	1	
5	22	ADMIN	String$	8			
6	30	TESTDATE	Date	10			
7	32	REPDATE	Date	10	PEOPLE	3	
8	34	OPERATOR	Relational	40	PEOPLE	3	
9	74	OPERID	Relational	8	PEOPLE	1	
10	82	OFFICER	Relational	40	PEOPLE	3	
11	122	OFFID	Relational	8	PEOPLE	1	
12	130	SPONSOR	Relational	50	ORGANISE	3	
13	180	SPONID	Relational	7	ORGANISE	1	
14	187	SPONCONT	Relational	40	PEOPLE	3	
15	227	SPCONTID	Relational	7	PEOPLE	1	
16	234	PRODUCT1	Relational	50	PRODUCT	3	
17	284	PRODID1	Relational	7	PRODUCT	1	
18	291	PRODUCT2	Relational	50	PRODUCT	3	
19	341	PRODID2	Relational	7	PRODUCT	1	
20	348	FLUX	Single!	5.1			
21	352	FLOW	Single!	4.1			*** NEW ***
22	356	THICK	Single!	9.6			
23	360	AREA	Single!	9.6			
24	364	C	Single!	9.6			
25	368	E	Single!	8.5			
26	372	OXYGEN	Single!	5.2			
27	376	RHCOND	Single!	4.1			
28	380	TEMPCOND	Single!	5.1			
29	384	RHTEST	Single!	4.1			
30	388	TEMPTEST	Single!	5.1			
31	392	ORIENT	Logical	1	H V		
32	393	PILOT	Logical	1	Y N		
33	394	GRID	Logical	1	N Y		
34	395	FRAME	Logical	1	Y N		
35	396	ASCARITE	Logical	1	Y N		
36	397	INSTRNO	String$	4	INSTRUM	1	*** INSTRUM ***
37	401	SCANS	Integer%	4			
38	403	INTERVAL	Integer%	2			
39	405	COMMENT1	String$	60			

40	465	COMMENT2	String$	60	
41	525	COMMENT3	String$	60	
42	585	COMMENT4	String$	60	
43	645	COMMENT5	String$	60	
44	705	MASSI	Single!	7.1	
45	709	MASSF	Single!	7.1	
46	713	MASSLOSS	Single!	7.2	*** NEW ***
47	717	TIGN	Integer%	5	
48	719	FLAMEOUT	Integer%	5	
49	721	MAXTIME	Integer%	5	
50	723	MAXQDOT	Single!	9.1	
51	727	MAXMDOT	Single!	9.2	
52	731	MAXSIGMA	Single!	9.2	
53	735	TOTLHEAT	Single!	9.2	*** NEW ***
54	739	AVGQDOT	Single!	9.2	
55	743	AVGMDOT	Single!	9.2	
56	747	AVGHC	Single!	9.2	
57	751	AVSIGMA	Single!	9.2	*** AVGSIGMA ***
58	755	AVGCO2	Single!	9.5	
59	759	AVGCO	Single!	9.5	
60	763	AVGH2O	Single!	9.5	
61	767	QDOT60	Single!	9.2	
62	771	MDOT60	Single!	9.2	
63	775	HC60	Single!	9.2	
64	779	SIGMA60	Single!	9.2	
65	783	CO260	Single!	9.5	
66	787	CO60	Single!	9.5	
67	791	H2O60	Single!	9.5	
68	795	QDOT180	Single!	9.2	
69	799	MDOT180	Single!	9.2	
70	803	HC180	Single!	9.2	
71	807	SIGMA180	Single!	9.2	
72	811	CO2180	Single!	9.5	
73	815	CO180	Single!	9.5	
74	819	H2O180	Single!	9.5	
75	823	QDOT300	Single!	9.2	
76	827	MDOT300	Single!	9.2	
77	831	HC300	Single!	9.2	
78	835	SIGMA300	Single!	9.2	
79	839	CO2300	Single!	9.5	
80	843	CO300	Single!	9.5	
81	847	H2O300	Single!	9.5	
82	851	SOOT	Single!	9.5	
83	855	HCL	Single!	9.5	
84	859	HCN	Single!	9.5	
85	863	HBR	Single!	9.5	
86	867	TUH	Single!	9.5	*** HF ***
87	871	USER1$	String$	10	*** USER1 ***
88	881	USER$2	String$	10	*** USER2 ***

89	891	USER3$	String$	10		*** USER3 ***
90	901	USERNUM1	Single!	10.2		*** USER4 ***
91	905	USERNUM2	Single!	10.2		*** USER5 ***
92	909	USERNUM3	Single!	10.3		*** USER6 ***
93	913	VERSION	Numeric$	5		
94	918	TEST	Numeric$	5		
95	923	ZNUMBER	Numeric$	7		

2.2 FURN

FURN: 92 fields, record length = 951

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	LABID	Relational	8	ORGANISE	1	
2	10	FILE	String$	8			
3	18	RECEIVED	String$	10			*** NEW ***
4	28	PRIVATE	Choice	10	-CIRCUL	1	
5	30	ADMIN	String$	8			
6	38	TESTDATE	String$	10			
7	48	REPDATE	String$	10	PEOPLE	3	
8	58	OPERATOR	Relational	40	PEOPLE	3	
9	98	OPERID	Relational	8	PEOPLE	1	
10	106	OFFICER	Relational	40	PEOPLE	3	
11	146	OFFID	Relational	8	PEOPLE	1	
12	154	SPONSOR	Relational	50	ORGANISE	3	
13	204	SPONID	Relational	7	ORGANISE	1	
14	211	SPONCONT	Relational	40	PEOPLE	3	
15	251	SPCONTID	Relational	7	PEOPLE	1	
16	258	PRODUCT1	Relational	50	PRODUCT	3	
17	308	PRODID1	Relational	7	PRODUCT	1	
18	315	PRODUCT2	Relational	50	PRODUCT	3	
19	365	PRODID2	Relational	7	PRODUCT	1	
20	372	FLUX	Single!	5.1			
21	376	FLOW	Single!	4.1			*** NEW ***
22	380	THICK	Single!	9.6			
23	384	AREA	Single!	9.6			*** NEW ***
24	388	C	Single!	9.6			*** NEW ***
25	392	E	Single!	8.5			
26	396	OXYGEN	Single!	5.2			
27	400	RHCOND	Single!	4.1			
28	404	TEMPCOND	Single!	5.1			
29	408	RHTEST	Single!	4.1			
30	412	TEMPTEST	Single!	5.1			
31	416	IGNTYPE	Choice	30	-IGNITOR	1	*** IGNITOR ***
32	418	ASCARITE	Logical	1	Y N		
33	419	INSTRNO	String$	4	INSTRUM	1	*** INSTRUM ***
34	423	SCANS	Integer%	4			

35	425	INTERVAL	Integer%	2	
36	427	COMMENT1	String$	60	
37	487	COMMENT2	String$	60	
38	547	COMMENT3	String$	60	
39	607	COMMENT4	String$	60	
40	667	COMMENT5	String$	60	
41	727	MASSI	Single!	7	
42	731	MASSF	Single!	7	
43	735	MASSLOSS	Single!	8.3	*** NEW ***
44	739	TIGN	Integer%	5	
45	741	FLAMEOUT	Integer%	5	
46	743	MAXTIME	Integer%	5	
47	745	MAXQDOT	Single!	9.1	
48	749	MAXMDOT	Single!	9.1	
49	753	MAXSIGMA	Single!	9.2	
50	757	TOTLHEAT	Single!	10.1	*** SUMQ ***
51	761	AVGQDOT	Single!	9.1	
52	765	AVGMDOT	Single!	9.1	
53	769	AVGHC	Single!	9.2	
54	773	AVSIGMA	Single!	9.2	*** AVGSIGMA ***
55	777	AVGCO2	Single!	9.5	
56	781	AVGCO	Single!	9.5	
57	785	AVGH2O	Single!	9.5	
58	789	QDOT60	Single!	9.1	*** NEW ***
59	793	MDOT60	Single!	9.1	*** NEW ***
60	797	HC60	Single!	9.2	*** NEW ***
61	801	SIGMA60	Single!	9.2	*** NEW ***
62	805	CO260	Single!	9.5	*** NEW ***
63	809	CO60	Single!	9.5	*** NEW ***
64	813	H2O60	Single!	9.5	*** NEW ***
65	817	QDOT180	Single!	9.1	*** NEW ***
66	821	MDOT180	Single!	9.1	*** NEW ***
67	825	HC180	Single!	9.2	*** NEW ***
68	829	SIGMA180	Single!	9.2	*** NEW ***
69	833	CO2180	Single!	9.5	*** NEW ***
70	837	CO180	Single!	9.5	*** NEW ***
71	841	H2O180	Single!	9.5	*** NEW ***
72	845	QDOT300	Single!	9.1	*** NEW ***
73	849	MDOT300	Single!	9.1	*** NEW ***
74	853	HC300	Single!	9.2	*** NEW ***
75	857	SIGMA300	Single!	9.2	*** NEW ***
76	861	CO2300	Single!	9.5	*** NEW ***
77	865	CO300	Single!	9.5	*** NEW ***
78	869	H2O300	Single!	9.5	*** NEW ***
79	873	SOOT	Single!	9.5	
80	877	HCL	Single!	9.5	
81	881	HCN	Single!	9.5	
82	885	HBR	Single!	9.5	
83	889	HF	Single!	9.5	

84	893	USER1$	String$	10	*** USER1 ***
85	903	USER$2	String$	10	*** USER2 ***
86	913	USER3$	String$	10	*** USER3 ***
87	923	USERNUM1	Single!	10.2	*** USER4 ***
88	927	USERNUM2	Single!	10.2	*** USER5 ***
89	931	USERNUM3	Single!	10.3	*** USER6 ***
90	935	VERSION	Numeric$	5	
91	940	TEST	Numeric$	5	
92	945	ZNUMBER	Numeric$	7	

2.3 FRESIST

FRESIST: 21 fields, record length = 640

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#
0	1	Deleted if "!"				
1	2	TESTCODE	Numeric$	8		
2	10	TDATE	Date	8		
3	12	SPONREF	Relational	5	ORGANISE	1
4	17	SPONSOR	Relational	50	ORGANISE	3
5	67	INSUTIME	Integer%	3		
6	69	INSUCOND	String$	22		
7	91	INTETIME	Integer%	3		
8	93	INTECOND	String$	22		
9	115	STABTIME	Integer%	3		
10	117	STABCOND	String$	22		
11	139	TESTTYPE	UCase$	2		
12	141	PRODREF	Relational	5	PRODUCT	1
13	146	FRDESC1	String$	55		
14	201	FRDESC2	String$	55		
15	256	FRDESC3	String$	55		
16	311	FRDESC4	String$	55		
17	366	FRDESC5	String$	55		
18	421	FRDESC6	String$	55		
19	476	FRDESC7	String$	55		
20	531	FRDESC8	String$	55		
21	586	FRDESC9	String$	55		

2.4 ORGANISE

ORGANISE: 14 fields, record length = 292

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	ORGID	Integer%	8			
2	4	CHEKORG	Numeric$	8			*** CHECKSUM ***
3	12	ORGANISE	String$	50			*** ORGAN ***
4	62	DIVISION	String$	50			
5	112	ADDRESS1	String$	32			
6	144	ADDRESS2	String$	32			
7	176	CITY	String$	20			
8	196	REGION	String$	12			
9	208	POSTCODE	UCase$	10			
10	218	COUNTRY	String$	20			
11	238	PHONE	UCase$	15			
12	253	FAXIMILE	Numeric$	15			*** FAX ***
13	268	TELEX	UCase$	15			
14	283	ORGDATE	String$	10			*** DATE ***

2.5 PEOPLE

PEOPLE: 20 fields, record length = 435

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	PERSONID	Integer%	7			*** PERSID ***
2	4	CHEKPER	Numeric$	8			*** CHECKSUM ***
3	12	NAME$	String$	40			
4	52	FIRSTNAM	String$	12			
5	64	INITIAL	String$	3			
6	67	LASTNAME	String$	20			
7	87	ORGANISE	String$	50			*** ORGAN ***
8	137	DIVISION	String$	50			
9	187	ADDRESS1	String$	32			
10	219	ADDRESS2	String$	32			
11	251	CITY	String$	20			
12	271	REGION	String$	12			
13	283	POSTCODE	UCase$	10			
14	293	COUNTRY	String$	20			
15	313	ADDINFO	String$	50			
16	363	PHONE	String$	15			
17	378	MORPHONE	String$	18			
18	396	FAX	String$	15			
19	411	TELEX	String$	15			
20	426	PERDATE	String$	10			*** DATE ***

2.6 INSTRUM

INSTRUM: 11 fields, record length = 383

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	INSTRID	Numeric$	4			
2	6	MAKERID	Relational	8	ORGANISE	1	
3	14	MAKER	Relational	50	ORGANISE	3	
4	64	SERIAL	String$	50			
5	114	COMMDATE	String$	10			
6	124	CALINTER	UCase$	10			
7	134	NOTES1	String$	50			*** NOTES ***
8	184	NOTES2	String$	50			*** NOTES ***
9	234	NOTES3	String$	50			*** NOTES ***
10	284	NOTES4	String$	50			*** NOTES ***
11	334	NOTES5	String$	50			*** NOTES ***

2.7 CALIB

CALIB: 17 fields, record length = 323

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	CALIBREF	Relational	8	INSTRUM	1	*** INSTRID ***
2	10	CALFILE	String$	20			*** FILE ***
3	30	CALDATE	String$	10			
4	40	NEXTDATE	String$	10			
5	50	OPERATOR	Relational	40	PEOPLE	3	*** NEW ***
6	90	OPERID	Relational	7	PEOPLE	1	*** OPERATOR ***
7	97	OFFICER	Relational	40	PEOPLE	3	*** NEW ***
8	137	OFFID	Relational	7	PEOPLE	1	*** OFFICER ***
9	144	CONV	String$	6			
10	150	CONST0	Numeric$	9			
11	159	CONST1	Numeric$	9			
12	168	CONST2	Numeric$	9			
13	177	CONST3	Numeric$	9			
14	186	CONST4	String$	9			
15	195	CONST5	Numeric$	9			
16	204	CALNOTE1	String$	60			*** NOTES ***
17	264	CALNOTE2	String$	60			*** NOTES ***

2.8 PRODUCT

PRODUCT: 19 fields, record length = 494

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	PRODID	UCase$	7			
2	9	CHEKPROD	Numeric$	8			*** CHECKSUM ***
3	17	PRODNAME	String$	50			*** NAME ***
4	67	MANUFACT	Relational	40	ORGANISE	3	
5	107	MANUFID	Relational	6	ORGANISE	1	
6	113	CONTACT	Relational	40	PEOPLE	3	
7	153	CONTACID	Relational	6	PEOPLE	1	
8	159	CATNO	String$	15			
9	174	MAINMAT	String$	50			
10	224	COMPOS	Logical	1	Y N		*** COMPOSIT ***
11	225	PRODENSI	Single!	7			*** DENSITY ***
12	229	PROTHICK	Single!	7			*** THICK ***
13	233	MAIN_USE	Choice	22	-MAINUSE	1	*** MAINUSE ***
14	235	PRODESC1	String$	50			*** DESCRIPT ***
15	285	PRODESC2	String$	50			*** DESCRIPT ***
16	335	PRODESC3	String$	50			*** DESCRIPT ***
17	385	PRODESC4	String$	50			*** DESCRIPT ***
18	435	PRODESC5	String$	50			*** DESCRIPT ***
19	485	PRDATE	String$	10			*** DATE ***

3. Future Modifications to FDMS Beta Version File Formats

A review of the file formats in Section 2 indicates the need for additional modifications to the internal storage. Some of these modifications are required in order to provide consistency in the length of relational fields. Other modifications are needed to standardize the naming or type specification of identical fields in separate data files. Finally, some modifications are required to include fields missing from the original design which are necessary for current computer fire models. All modifications are indicated by highlighting the variation of the format in this section from the corresponding specification in the previous section. This section details changes which have not been made at this time but are required in order for the beta version of FDMS to provide acceptable storage of all fire test data during the transition to the next generation of software. Existing import and export software should not be changed until the modifications suggested in this section have been incorporated into the FDMS software.

New file specifications required to include the LIFT (Lateral Ignition and Flame spread Test apparatus) and room/corner test in the FDMS are detailed in this section. Modifications in these formats from the original design specifications are highlighted.

REMINDER: *Highlighting throughout this section indicates future modifications which will be made to the FDMS beta version formats in the previous section.*

3.1 CONE

CONE: 98 fields, record length = 939

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	LABID	Relational	8	ORGANISE	1	
2	10	FILE	String$	8			
3	18	RECEIVED	Date	10			
4	20	PRIVATE	Choice	10	~CIRCUL	1	
5	22	ADMIN	String$	8			
6	30	TESTDATE	Date	10			
7	32	REPDATE	Date	10			
8	34	OPERATOR	Relational	40	PEOPLE	3	
9	74	OPERID	Relational	8	PEOPLE	1	
10	82	OFFICER	Relational	40	PEOPLE	3	
11	122	OFFID	Relational	8	PEOPLE	1	
12	130	SPONSOR	Relational	50	ORGANISE	3	
13	180	SPONID	Relational	8	ORGANISE	1	
14	188	SPONCONT	Relational	40	PEOPLE	3	
15	228	SPCONTID	Relational	8	PEOPLE	1	
16	236	PRODUCT1	Relational	50	PRODUCT	3	
17	286	PRODID1	Relational	7	PRODUCT	1	
18	293	SPDATE1	Date	10			*** NEW ***
19	295	PRODUCT2	Relational	50	PRODUCT	3	
20	345	PRODID2	Relational	7	PRODUCT	1	
21	352	SPDATE2	Date	10			*** NEW ***
22	354	FLUX	Single!	5.1			
23	358	FLOW	Single!	4.1			
24	362	THICK	Single!	9.6			
25	366	DENSITY	Single!	9.6			*** NEW ***
26	370	AREA	Single!	9.6			
27	374	C	Single!	9.6			
28	378	E	Single!	8.5			
29	382	OXYGEN	Single!	5.2			
30	386	RHCOND	Single!	4.1			
31	390	TEMPCOND	Single!	5.1			
32	394	RHTEST	Single!	4.1			
33	398	TEMPTEST	Single!	5.1			
34	402	ORIENT	Logical	1	H V		
35	403	PILOT	Logical	1	Y N		
36	404	GRID	Logical	1	N Y		
37	405	FRAME	Logical	1	Y N		
38	406	ASCARITE	Logical	1	Y N		
39	407	INSTRNO	Relational	4	INSTRUM	1	

40	411	SCANS	Integer%	4	
41	413	INTERVAL	Integer%	2	
42	415	COMMENT1	String$	60	
43	475	COMMENT2	String$	60	
44	535	COMMENT3	String$	60	
45	595	COMMENT4	String$	60	
46	655	COMMENT5	String$	60	
47	715	MASSI	Single!	7.1	
48	719	MASSF	Single!	7.1	
49	723	MASSLOSS	Single!	7.2	
50	727	TIGN	Integer%	5	
51	729	FLAMEOUT	Integer%	5	
52	731	MAXTIME	Integer%	5	
53	733	MAXQDOT	Single!	9.1	
54	737	MAXMDOT	Single!	9.2	
55	741	MAXSIGMA	Single!	9.2	
56	745	TOTLHEAT	Single!	9.2	
57	749	AVGQDOT	Single!	9.2	
58	753	AVGMDOT	Single!	9.2	
59	757	AVGHC	Single!	9.2	
60	761	AVGSIGMA	Single!	9.2	*** AVSIGMA ***
61	765	AVGCO2	Single!	9.5	
62	769	AVGCO	Single!	9.5	
63	773	AVGH2O	Single!	9.5	
64	777	QDOT60	Single!	9.2	
65	781	MDOT60	Single!	9.2	
66	785	HC60	Single!	9.2	
67	789	SIGMA60	Single!	9.2	
68	793	CO260	Single!	9.5	
69	797	CO60	Single!	9.5	
70	801	H2O60	Single!	9.5	
71	805	QDOT180	Single!	9.2	
72	809	MDOT180	Single!	9.2	
73	813	HC180	Single!	9.2	
74	817	SIGMA180	Single!	9.2	
75	821	CO2180	Single!	9.5	
76	825	CO180	Single!	9.5	
77	829	H2O180	Single!	9.5	
78	833	QDOT300	Single!	9.2	
79	837	MDOT300	Single!	9.2	
80	841	HC300	Single!	9.2	
81	845	SIGMA300	Single!	9.2	
82	849	CO2300	Single!	9.5	
83	853	CO300	Single!	9.5	
84	857	H2O300	Single!	9.5	
85	861	SOOT	Single!	9.5	
86	865	HCL	Single!	9.5	
87	869	HCN	Single!	9.5	
88	873	HBR	Single!	9.5	

89	877	TUH	Single!	9.5	
90	881	USER1$	String$	10	
91	891	USER2$	String$	10	*** USER$2 ***
92	901	USER3$	String$	10	
93	911	USERNUM1	Single!	10.2	
94	915	USERNUM2	Single!	10.2	
95	919	USERNUM3	Single!	10.3	
96	923	VERSION	Numeric$	5	
97	928	TEST	Numeric$	5	
98	933	ZNUMBER	Numeric$	7	

3.2 FURN

The HF field originally allocated to hydrogen fluoride measurements was reallocated to total unburned hydrocarbons, TUH, to conform to current usage in laboratories.

FURN: 95 fields, record length = 937

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	LABID	Relational	8	ORGANISE	1	
2	10	FILE	String$	8			
3	18	RECEIVED	Date	10			
4	20	PRIVATE	Choice	10	~CIRCUL	1	
5	22	ADMIN	String$	8			
6	30	TESTDATE	Date	10			
7	32	REPDATE	Date	10			
8	34	OPERATOR	Relational	40	PEOPLE	3	
9	74	OPERID	Relational	8	PEOPLE	1	
10	82	OFFICER	Relational	40	PEOPLE	3	
11	122	OFFID	Relational	8	PEOPLE	1	
12	130	SPONSOR	Relational	50	ORGANISE	3	
13	180	SPONID	Relational	8	ORGANISE	1	
14	188	SPONCONT	Relational	40	PEOPLE	3	
15	228	SPCONTID	Relational	8	PEOPLE	1	
16	236	PRODUCT1	Relational	50	PRODUCT	3	
17	286	PRODID1	Relational	7	PRODUCT	1	
18	293	SPDATE1	Date	10			*** NEW ***
19	295	PRODUCT2	Relational	50	PRODUCT	3	
20	345	PRODID2	Relational	7	PRODUCT	1	
21	352	SPDATE2	Date	10			*** NEW ***
22	354	FLUX	Single!	5.1			
23	358	FLOW	Single!	4.1			
24	362	THICK	Single!	9.6			
25	366	DENSITY	Single!	9.6			*** NEW ***
26	370	AREA	Single!	9.6			
27	374	C	Single!	9.6			

28	378	E	Single!	8.5			
29	382	OXYGEN	Single!	5.2			
30	386	RHCOND	Single!	4.1			
31	390	TEMPCOND	Single!	5.1			
32	394	RHTEST	Single!	4.1			
33	398	TEMPTEST	Single!	5.1			
34	402	IGNTYPE	Choice	30	~IGNITOR	1	
35	404	ASCARITE	Logical	1	Y N		
36	405	INSTRNO	Relational	4	INSTRUM	1	
37	409	SCANS	Integer%	4			
38	411	INTERVAL	Integer%	2			
39	413	COMMENT1	String$	60			
40	473	COMMENT2	String$	60			
41	533	COMMENT3	String$	60			
42	593	COMMENT4	String$	60			
43	653	COMMENT5	String$	60			
44	713	MASSI	Single!	7.1			
45	717	MASSF	Single!	7.1			
46	721	MASSLOSS	Single!	7.2			
47	725	TIGN	Integer%	5			
48	727	FLAMEOUT	Integer%	5			
49	729	MAXTIME	Integer%	5			
50	731	MAXQDOT	Single!	9.1			
51	735	MAXMDOT	Single!	9.2			
52	739	MAXSIGMA	Single!	9.2			
53	743	TOTLHEAT	Single!	9.2			
54	747	AVGQDOT	Single!	9.2			
55	751	AVGMDOT	Single!	9.2			
56	755	AVGHC	Single!	9.2			
57	759	AVGSIGMA	Single!	9.2			*** AVSIGMA ***
58	763	AVGCO2	Single!	9.5			
59	767	AVGCO	Single!	9.5			
60	771	AVGH2O	Single!	9.5			
61	775	QDOT60	Single!	9.2			
62	779	MDOT60	Single!	9.2			
63	783	HC60	Single!	9.2			
64	787	SIGMA60	Single!	9.2			
65	791	CO260	Single!	9.5			
66	795	CO60	Single!	9.5			
67	799	H2O60	Single!	9.5			
68	803	QDOT180	Single!	9.2			
69	807	MDOT180	Single!	9.2			
70	811	HC180	Single!	9.2			
71	815	SIGMA180	Single!	9.2			
72	819	CO2180	Single!	9.5			
73	823	CO180	Single!	9.5			
74	827	H2O180	Single!	9.5			
75	831	QDOT300	Single!	9.2			
76	835	MDOT300	Single!	9.2			

77	839	HC300	Single!	9.2	
78	843	SIGMA300	Single!	9.2	
79	847	CO2300	Single!	9.5	
80	851	CO300	Single!	9.5	
81	855	H2O300	Single!	9.5	
82	859	SOOT	Single!	9.5	
83	863	HCL	Single!	9.5	
84	867	HCN	Single!	9.5	
85	871	HBR	Single!	9.5	
86	875	TUH	Single!	9.5	*** HF ***
87	879	USER1$	String$	10	
88	889	USER2$	String$	10	*** USER$2 ***
89	899	USER3$	String$	10	
90	909	USERNUM1	Single!	10.2	
91	913	USERNUM2	Single!	10.2	
92	917	USERNUM3	Single!	10.3	
93	921	VERSION	Numeric$	5	
94	926	TEST	Numeric$	5	
95	931	ZNUMBER	Numeric$	7	

3.3 LIFT

The PRODORG1, CONTACT1, PRODORG2, and CONTACT2 fields in the original LIFT data file have been deleted since they are included in the PRODUCT file as the MANUFID and CONTACID fields.

LIFT: 57 fields, record length = 796

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	LABID	Relational	8	ORGANISE	1	
2	10	FILE	String$	8			
3	18	RECEIVED	Date	10			*** NEW ***
4	20	PRIVATE	Choice	10	-CIRCUL	1	
5	22	ADMIN	String$	8			*** NEW ***
6	30	TESTDATE	Date	10			
7	32	REPDATE	Date	10			*** NEW ***
8	34	OPERATOR	Relational	40	PEOPLE	3	*** NEW ***
9	74	OPERID	Relational	8	PEOPLE	1	*** OPERATOR ***
10	82	OFFICER	Relational	40	PEOPLE	3	*** NEW ***
11	122	OFFID	Relational	8	PEOPLE	1	*** OFFICER ***
12	130	SPONSOR	Relational	50	ORGANISE	3	*** NEW ***
13	180	SPONID	Relational	8	ORGANISE	1	
14	188	SPONCONT	Relational	40	PEOPLE	3	*** NEW ***
15	228	SPCONTID	Relational	8	PEOPLE	1	*** SPONCONT ***
16	236	PRODUCT1	Relational	50	PRODUCT	3	*** NEW ***
17	286	PRODID1	Relational	7	PRODUCT	1	

18	293	SPDATE1	Date	10			*** NEW ***
19	295	PRODUCT2	Relational	50	PRODUCT	3	*** NEW ***
20	345	PRODID2	Relational	7	PRODUCT	1	
21	352	SPDATE2	Date	10			*** NEW ***
22	354	THICK	Single!	9.6			
23	358	DENSITY	Single!	9.6			*** NEW ***
24	362	AREA	Single!	9.6			
25	366	RHCOND	Single!	4.1			
26	370	TEMPCOND	Single!	5.1			
27	374	RHTEST	Single!	4.1			
28	378	TEMPTEST	Single!	5.1			
29	382	INSTRNO	Relational	4	INSTRUM	1	*** INSTRUM ***
30	386	COMMENT1	String$	60			
31	446	COMMENT2	String$	60			
32	506	COMMENT3	String$	60			
33	566	COMMENT4	String$	60			
34	626	COMMENT5	String$	60			
35	686	MASSI	Single!	7.1			
36	690	MASSF	Single!	7.1			*** NEW ***
37	694	MASSLOSS	Single!	7.2			*** NEW ***
38	698	TIGN	Integer%	5			*** NEW ***
39	700	FLAMEOUT	Integer%	5			*** NEW ***
40	702	QIG	Single!	8.0			
41	706	QSMIN	Single!	8.0			
42	710	TIG	Single!	8.0			
43	714	TSMIN	Single!	8.0			
44	718	TSTAR	Single!	8.0			
45	722	INERTIA	Single!	8.3			
46	726	B	Single!	8.3			
47	730	C	Single!	8.2			
48	734	PHI	Single!	8.2			
49	738	USER1$	String$	10			*** USER1 ***
50	748	USER2$	String$	10			*** USER2 ***
51	758	USER3$	String$	10			*** USER3 ***
52	768	USERNUM1	Single!	10.2			*** USER4 ***
53	772	USERNUM2	Single!	10.2			*** USER5 ***
54	776	USERNUM3	Single!	10.3			*** USER6 ***
55	780	VERSION	Numeric$	5			
56	785	TEST	Numeric$	5			
57	790	ZNUMBER	Numeric$	7			

3.4 ROOM

The HF field originally allocated to hydrogen fluoride measurements was reallocated to total unburned hydrocarbons, TUH, to conform to current usage in laboratories.

ROOM: 102 fields, record length = 1129

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	LABID	Relational	8	ORGANISE	1	
2	10	FILE	String$	8			
3	18	RECEIVED	Date	10			*** NEW ***
4	20	PRIVATE	Choice	10	-CIRCUL	1	
5	22	ADMIN	String$	8			
6	30	TESTDATE	Date	10			
7	32	REPDATE	Date	10			
8	34	OPERATOR	Relational	40	PEOPLE	3	
9	74	OPERID	Relational	8	PEOPLE	1	
10	82	OFFICER	Relational	40	PEOPLE	3	
11	122	OFFID	Relational	8	PEOPLE	1	
12	130	SPONSOR	Relational	50	ORGANISE	3	
13	180	SPONID	Relational	8	ORGANISE	1	
14	188	SPONCONT	Relational	40	PEOPLE	3	
15	228	SPCONTID	Relational	8	PEOPLE	1	
16	236	PRODUCT1	Relational	50	PRODUCT	3	
17	286	PRODID1	Relational	7	PRODUCT	1	
18	293	SPDATE1	Date	10			
19	295	PRODUCT2	Relational	50	PRODUCT	3	
20	345	PRODID2	Relational	7	PRODUCT	1	
21	352	SPDATE2	Date	10			
22	354	FLUX	Single!	5.1			*** NEW ***
23	358	FLOW	Single!	4.1			*** NEW ***
24	362	THICK	Single!	9.6			
25	366	DENSITY	Single!	9.6			
26	370	AREA	Single!	9.6			
27	374	E	Single!	8.5			
28	378	OXYGEN	Single!	5.2			
29	382	RHCOND	Single!	4.1			
30	386	TEMPCOND	Single!	5.1			
31	390	RHTEST	Single!	4.1			
32	394	TEMPTEST	Single!	5.1			
33	398	SURFDENS	Single!	9.6			
34	402	MOUNT1	String$	60			
35	462	MOUNT2	String$	60			
36	522	IGNITOR	Choice	1	S A O	1	
37	524	BURNER	String$	60			
38	584	LOCATION	Choice	1	C W O	1	

39	586	ASCARITE	Logical	1	Y N		
40	587	INSTRNO	Relational	4	INSTRUM 1		*** INSTRUM ***
41	591	SCANS	Integer%	4			
42	593	INTERVAL	Integer%	2			
43	595	COMMENT1	String$	60			
44	655	COMMENT2	String$	60			
45	715	COMMENT3	String$	60			
46	775	COMMENT4	String$	60			
47	835	COMMENT5	String$	60			
48	895	MASSI	Single!	7.1			
49	899	MASSF	Single!	7.1			
50	903	MASSLOSS	Single!	7.2			*** NEW ***
51	907	TIGN	Integer%	5			
52	909	FLASH	Integer%	5			
53	911	FLAMEOUT	Integer%	5			
54	913	MAXTIME	Integer%	5			
55	915	MAXQDOT	Single!	9.1			
56	919	MAXMDOT	Single!	9.2			
57	923	MAXSIGMA	Single!	9.2			*** NEW ***
58	927	MAXEXT	Single!	9.2			
59	931	TOTLHEAT	Single!	9.2			*** SUMQ ***
60	935	SUMEXT	Single!	9.2			
61	939	AVGQDOT	Single!	9.2			*** NEW ***
62	943	AVGMDOT	Single!	9.2			*** NEW ***
63	947	AVGHC	Single!	9.2			
64	951	AVGSIGMA	Single!	9.2			
65	955	AVGCO2	Single!	9.5			
66	959	AVGCO	Single!	9.5			
67	963	AVGH2O	Single!	9.5			
68	967	QDOT60	Single!	9.2			*** NEW ***
69	971	MDOT60	Single!	9.2			*** NEW ***
70	975	HC60	Single!	9.2			*** NEW ***
71	979	SIGMA60	Single!	9.2			*** NEW ***
72	983	CO260	Single!	9.5			*** NEW ***
73	987	CO60	Single!	9.5			*** NEW ***
74	991	H2O60	Single!	9.5			*** NEW ***
75	995	QDOT180	Single!	9.2			*** NEW ***
76	999	MDOT180	Single!	9.2			*** NEW ***
77	1003	HC180	Single!	9.2			*** NEW ***
78	1007	SIGMA180	Single!	9.2			*** NEW ***
79	1011	CO2180	Single!	9.5			*** NEW ***
80	1015	CO180	Single!	9.5			*** NEW ***
81	1019	H2O180	Single!	9.5			*** NEW ***
82	1023	QDOT300	Single!	9.2			*** NEW ***
83	1027	MDOT300	Single!	9.2			*** NEW ***
84	1031	HC300	Single!	9.2			*** NEW ***
85	1035	SIGMA300	Single!	9.2			*** NEW ***
86	1039	CO2300	Single!	9.5			*** NEW ***
87	1043	CO300	Single!	9.5			*** NEW ***

88	1047	H2O300	Single!	9.5	*** NEW ***
89	1051	SOOT	Single!	9.5	
90	1055	HCL	Single!	9.5	
91	1059	HCN	Single!	9.5	
92	1063	HBR	Single!	9.5	
93	1067	TUH	Single!	9.5	*** HF ***
94	1071	USER1$	String$	10	*** USER1 ***
95	1081	USER2$	String$	10	*** USER2 ***
96	1091	USER3$	String$	10	*** USER3 ***
97	1101	USERNUM1	Single!	10.2	*** USER4 ***
98	1105	USERNUM2	Single!	10.2	*** USER5 ***
99	1109	USERNUM3	Single!	10.3	*** USER6 ***
100	1113	VERSION	Numeric$	5	
101	1118	TEST	Numeric$	5	
102	1123	ZNUMBER	Numeric$	7	

3.5 FRESIST

FRESIST: 21 fields, record length = 640

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#
0	1	Deleted if "!"				
1	2	TESTCODE	Numeric$	8		
2	10	TDATE	Date	10		
3	12	SPONREF	Relational	8	ORGANISE	1
4	17	SPONSOR	Relational	50	ORGANISE	3
5	67	INSUTIME	Integer%	3		
6	69	INSUCOND	String$	22		
7	91	INTETIME	Integer%	3		
8	93	INTECOND	String$	22		
9	115	STABTIME	Integer%	3		
10	117	STABCOND	String$	22		
11	139	TESTTYPE	UCase$	2		
12	141	PRODREF	Relational	7	PRODUCT	1
13	146	FRDESC1	String$	55		
14	201	FRDESC2	String$	55		
15	256	FRDESC3	String$	55		
16	311	FRDESC4	String$	55		
17	366	FRDESC5	String$	55		
18	421	FRDESC6	String$	55		
19	476	FRDESC7	String$	55		
20	531	FRDESC8	String$	55		
21	586	FRDESC9	String$	55		

3.6 ORGANISE

ORGANISE: 14 fields, record length = 290

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	ORGID	Numeric$	8			
2	10	CHEKORG	Numeric$	8			
3	18	ORGANISE	String$	50			
4	68	DIVISION	String$	50			
5	118	ADDRESS1	String$	32			
6	150	ADDRESS2	String$	32			
7	182	CITY	String$	20			
8	202	REGION	String$	12			
9	214	POSTCODE	UCase$	10			
10	224	COUNTRY	UCase$	20			
11	244	PHONE	Numeric$	15			
12	259	FAX	Numeric$	15			*** FAXIMILE ***
13	274	TELEX	UCase$	15			
14	289	ORGDATE	Date	10			

3.7 PEOPLE

PEOPLE: 20 fields, record length = 441

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#	
0	1	Deleted if "!"					
1	2	PERSONID	Numeric$	8			
2	10	CHEKPER	Numeric$	8			
3	18	FULLNAME	String$	40			*** NAME$ ***
4	58	FIRSTNAM	String$	12			
5	70	INITIAL	String$	3			
6	73	LASTNAME	String$	20			
7	93	ORGANISE	String$	50			
8	143	DIVISION	String$	50			
9	193	ADDRESS1	String$	32			
10	225	ADDRESS2	String$	32			
11	257	CITY	String$	20			
12	277	REGION	String$	12			
13	289	POSTCODE	UCase$	10			
14	299	COUNTRY	UCase$	20			
15	319	ADDINFO	String$	50			
16	369	PHONE	Numeric$	15			
17	384	MORPHONE	UCase$	18			
18	402	FAX	Numeric$	15			
19	417	TELEX	UCase$	15			
20	432	PERDATE	Date	10			

3.8 INSTRUM

INSTRUM: 11 fields, record length = 375

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#
0	1	Deleted if "!"				
1	2	INSTRID	Numeric$	4		
2	6	MAKERID	Relational	8	ORGANISE	1
3	14	MAKER	Relational	50	ORGANISE	3
4	64	SERIAL	String$	50		
5	114	COMMDATE	Date	10		
6	116	CALINTER	UCase$	10		
7	126	NOTES1	String$	50		
8	176	NOTES2	String$	50		
9	226	NOTES3	String$	50		
10	276	NOTES4	String$	50		
11	326	NOTES5	String$	50		

3.9 CALIB

CALIB: 17 fields, record length = 305

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#
0	1	Deleted if "!"				
1	2	CALIBREF	Relational	4	INSTRUM	1
2	6	CALFILE	String$	20		
3	26	CALDATE	Date	10		
4	28	NEXTDATE	Date	10		
5	30	OPERATOR	Relational	40	PEOPLE	3
6	70	OPERID	Relational	8	PEOPLE	1
7	78	OFFICER	Relational	40	PEOPLE	3
8	118	OFFID	Relational	8	PEOPLE	1
9	126	CONV	String$	6		
10	132	CONST0	Numeric$	9		
11	141	CONST1	Numeric$	9		
12	150	CONST2	Numeric$	9		
13	159	CONST3	Numeric$	9		
14	168	CONST4	Numeric$	9		
15	177	CONST5	Numeric$	9		
16	186	CALNOTE1	String$	60		
17	246	CALNOTE2	String$	60		

3.10 PRODUCT

PRODUCT: 19 fields, record length = 500

Fld #	File Offset	Field Name	Type	Screen Format	Related/Choice File	Field#
0	1	Deleted if "!"				
1	2	PRODID	UCase$	7		
2	9	CHEKPROD	Numeric$	8		
3	17	PRODNAME	String$	50		
4	67	MANUFACT	Relational	50	ORGANISE	3
5	117	MANUFID	Relational	8	ORGANISE	1
6	125	CONTACT	Relational	40	PEOPLE	3
7	165	CONTACID	Relational	8	PEOPLE	1
8	173	CATNO	String$	15		
9	188	MAINMAT	String$	50		
10	238	COMPOS	Logical	1	Y N	
11	239	PRODENSI	Single!	9.6		
12	243	PROTHICK	Single!	9.6		
13	247	MAIN_USE	Choice	22	~MAINUSE	1
14	249	PRODESC1	String$	50		
15	299	PRODESC2	String$	50		
16	349	PRODESC3	String$	50		
17	399	PRODESC4	String$	50		
18	449	PRODESC5	String$	50		
19	499	PRDATE	Date	10		

4. FDMS Beta Version Raw Data File

The example raw data file from the original FDMS specification document is included in this section highlighting modifications required for use in the FDMS beta version program. This section is included for developers responsible for generating files in the FDMS format. Modifications to the FDMS database from Section 2 have been included. These changes involve the field headings for the scalar data which must be identical to the corresponding names in the database.

```
RAWCONE
TABLE
CONE
FILE
34A-FG
SPONID
U1234567
SPCONTID
U2345678
LABID
U3456789
TESTDATE
```

```
12/14/87
OPERID
U4567890
OFFID
U5678901
PRIVATE
PUBLIC
FLUX
50
ORIENT
H
PILOT
Y
PRODID1
U6789012
PRODID2
U9012345
AREA
0.01
.
.
.
.
TABLE
ORGANISE
ORGID
U123456
ORGANISE
Sponsoring Company
DIVISION
Main Division
ADDRESS1
101 Main Street
ADDRESS2
P.O. Box 100
CITY
Anytown
REGION
State
POSTCODE
99999
COUNTRY
USA
PHONE
(201) 555-1000
FAX
(210) 555-1235
TELEX
1234567
ORGDATE
12/14/87
TABLE
ORGANISE
ORGID
U3456789
ORGANISE
National Institute of Standards and Technology
.
.
.
.
TABLE
SUPPLEMENT
VERSION
1.0
CALIBRATION
```

```
0.0440
CALIBRATIONDATE
12/14/87
.
.
.
.
VECTOR DATA
CHANNEL 00
Time
TIME
Time from sample insertion
Sec Sec 0. 86400. P1 0. 1.
0.0
5.0
10.0
.
.
.
CHANNEL 01
Oxygen analyzer, Servomex 540A, SN 540/712/2761/G
O2
Oxygen concentration in exhaust stack
Volts Vol% 0. 2.5 P1 0. 10.
2.0954
2.0954
2.0954
.
.
.
```

5. FDMS Beta Version Import/Export File

The example FDMS import/export file from the original FDMS specification document is included in this section with required modifications highlighted. This section is included for developers responsible for generating files in the FDMS format. Modifications to the FDMS database from Section 2 have been included. These changes involve the field headings for the scalar data which must be identical to the corresponding names in the database.

```
TABLE
CONE
FILE
34A-FG
SPONID
U1234567
SPCONTID
U2345678
LABID
U3456789
TESTDATE
12/14/87
OPERID
U4567890
OFFID
U5678901
PRIVATE
PUBLIC
FLUX
```

```
50
ORIENT
H
PILOT
Y
PRODID1
U6789012
PRODID2
U9012345
AREA
0.01
.
.
.
.
TABLE
RECORD
ORGANISE
ORGID
U123456
ORGANISE
Sponsoring Company
DIVISION
Main Division
ADDRESS1
101 Main Street
ADDRESS2
P.O. Box 100
CITY
Anytown
REGION
State
POSTCODE
99999
COUNTRY
USA
PHONE
(201) 555-1000
FAX
(210) 555-1235
TELEX
1234567
ORGDATE
12/14/87
RECORD
ORGID
U3456789
ORGANISE
National Institute of Standards and Technology
.
.
.
.
.
VECTOR DATA
VARIABLE
Time
TIME
Time from sample insertion
Sec
0.0
5.0
.
.
.
VARIABLE
```

```
Load Cell, ATC 6005C06E1XX, SN 2851
MASS
Specimen mass
Grams
169.85
169.50
.
.
.
VARIABLE
Smoke extinction laser system, SSDCL01
EXT. COEFF.
Smoke extinction coefficient in exhaust stack
1/m
0.0000
0.0000
.
.
.
.
.
.
VARIABLE
DERIVED
CO2 YIELD
Carbon dioxide yield
kg/kg
0.0000
0.0000
.
.
.
```

6. Field Definitions

Field Name	Table	Description
ADDINFO	PEOPLE	Supplementary information about an individual.
ADDRESS1	ORGANISE, PEOPLE	Street address.
ADDRESS2	ORGANISE, PEOPLE	Additional mailing information
ADMIN	CONE, FURN, LIFT, ROOM	Laboratory specific code used to store internal administrative information such as Cost Center code or invoice number.
AREA	CONE, FURN, LIFT, ROOM	Specimen area (m^2). For the Cone Calorimeter, the area under the specimen holder edge or the edge frame is *not* included.
ASCARITE	CONE, FURN, LIFT, ROOM	Indicates if the CO_2 was removed from the sample before O_2 was measured using Ascarite or equivalent means.
AVGCO	CONE, FURN, ROOM	Test average of the CO yield (kg/kg).
AVGCO2	CONE, FURN, ROOM	Test average of the CO_2 yield (kg/kg).
AVGH2O	CONE, FURN, ROOM	Test average of the H_2O yield (kg/kg).
AVGHC	CONE, FURN, ROOM	Test average of the effective heat of combustion Δh_c (kJ/g).
AVGMDOT	CONE, FURN, ROOM	Test average of the mass loss rate $\dot{m}''$ ($g/s \cdot m_2$).
AVGQDOT	CONE, FURN, ROOM	Test average of the rate of heat release $\dot{q}''$ (kW/m^2).
AVGSIGMA	CONE, FURN, ROOM	Test average of the specific smoke extinction area σ_m (m^2/kg).
B	LIFT	Ignition parameter ($s^{-0.5}$).
BURNER	ROOM	When the ignitor is a burner, the heat output values used for the burner program have to be specified. These are entered as a string of numbers, separated by at least one blank. The order is: Time (s) Output (kW) Time (s) Output (kW) ...
C	CONE, FURN, LIFT	Parameter. For the Cone Calorimeter, this is the orifice constant as determined from the CH_4 burner calibration. For the LIFT, this is the slope of correlated flame spread data ($s^{½} \cdot m^{½} \cdot W^{-1}$).
CALDATE	CALIB	Date of the last calibration.
CALFILE	CALIB	Reference field indicating where the original or official calibration report may be found, *e.g.*, a report number or a notebook page. Most laboratories will have a different system for doing this.
CALIBREF	CALIB	INSTRID number from the INSTRUM table.
CALINTER	INSTRUM	Recommended calibration interval in months.

Field Name	Table	Description
CALNOTE1	CALIB	Any comments which need recording about operation or calibration of this instrument such as repairs made.
CALNOTE2	CALIB	Additional calibration notes.
CATNO	PRODUCT	Optional catalog number since it may not exist for all products. May include alphabetical characters as well as numbers.
CHEKORG	ORGANISE	Implementation of a coding algorithm to enable searching for "close" matches when importing tests. Since a given organization may be entered into the database by multiple testing laboratories, some scheme is necessary to find the closest match. By offering the operator a small list of "close" matches, the process of finding the matching wording in the target database is simplified.
CHEKPER	PEOPLE	Implementation of a coding algorithm to enable searching for "close" matches when importing tests. Since a given individual may be entered into the database by multiple testing laboratories, some scheme is necessary to find the closest match. By offering the operator a small list of "close" matches, the process of finding the matching wording in the target database is simplified.
CHEKPROD	PRODUCT	Implementation of a coding algorithm to enable searching for "close" matches when importing tests. Since a given product may be entered into the database by multiple testing laboratories, some scheme is necessary to find the closest match. By offering the operator a small list of "close" matches, the process of finding the matching wording in the target database is simplified.
CO180	CONE, FURN, ROOM	Average CO yield over 180 seconds subsequent to ignition (kg/kg).
CO2180	CONE, FURN, ROOM	Average CO_2 yield over 180 seconds subsequent to ignition (kg/kg).
CO2300	CONE, FURN, ROOM	Average CO_2 yield over 300 seconds subsequent to ignition (kg/kg).
CO260	CONE, FURN, ROOM	Average CO_2 yield over 60 seconds subsequent to ignition (kg/kg).
CO300	CONE, FURN, ROOM	Average CO yield over 300 seconds subsequent to ignition (kg/kg).
CO60	CONE, FURN, ROOM	Average CO yield over 60 seconds subsequent to ignition (kg/kg).
COMMDATE	INSTRUM	Date the instrument was first commissioned.
COMMENT1	CONE, FURN, LIFT, ROOM	Test comments entered by the operator any time before, during, or after a test. In some cases, *e.g.*, second ignition, the comment is directly inserted by the device software and not by the operator.
COMMENT2	CONE, FURN, LIFT, ROOM	Additional operator comments.

Field Name	Table	Description
COMMENT3	CONE, FURN, LIFT, ROOM	Additional operator comments.
COMMENT4	CONE, FURN, LIFT, ROOM	Additional operator comments.
COMMENT5	CONE, FURN, LIFT, ROOM	Additional operator comments.
COMPOS	PRODUCT	Indicates if the product is a composite.
CONST0	CALIB	Constant required for the conversion of instrument data to physical units. Refer to the conversion equations in the CONV field description for exact details.
CONST1	CALIB	Constant required for the conversion of instrument data to physical units. Refer to the conversion equations in the CONV field description for exact details.
CONST2	CALIB	Optional constant used for the polynomial conversion of instrument data to physical units. Refer to the polynomial equation in the CONV field description for exact details.
CONST3	CALIB	Optional constant used for the polynomial conversion of instrument data to physical units. Refer to the polynomial equation in the CONV field description for exact details.
CONST4	CALIB	Optional constant used for the polynomial conversion of instrument data to physical units. Refer to the polynomial equation in the CONV field description for exact details.
CONST5	CALIB	Optional constant used for the polynomial conversion of instrument data to physical units. Refer to the polynomial equation in the CONV field description for exact details.
CONTACID	PRODUCT	PERSONID number from the PEOPLE table for the contact within the manufacturing company.
CONTACT	PRODUCT	Name of a contact within the manufacturing company. The name must match an individual in the PEOPLE table.

Field Name	Table	Description
CONV	CALIB	Type of conversion of instrument data to physical units. Three types of conversion are possible: polynomial, logarithmic, and Type K thermocouples. For polynomial conversion, CONV contains a capital P followed by one digit indicating the degree of the polynomial. Required constants are entered in the CONST fields. The polynomial conversion equation is: (physical units) = CONST0 + CONST1 * (analog units) + CONST2 * (analog units)^2 + CONST3 * (analog units)^3 + CONST4 * (analog units)^4 + CONST5 * (analog units)^5. For logarithmic conversion, CONV contains the phrase LOG. The logarithmic conversion equation is: (physical units) = CONST0 * ln(1 - CONST1*(analog units)) If CONV contains TYPEK, the software will perform an automatic conversion to the physical temperature units using built in conversion algorithms.
COUNTRY	ORGANISE, PEOPLE	Country name, common name instead of full name (*e.g.*, USA, not United States of America)
DELETED	ALL	Used by the database system to indicate a deleted record.
DENSITY	CONE, FURN, LIFT, ROOM	Density of the composite product (kg/m^3).
DIVISION	ORGANISE, PEOPLE	Division/department/branch (*e.g.*, Building and Fire Research Laboratory).
E	CONE, FURN, ROOM	Oxygen consumption constant. A generic value for this is 13.1 kJ/gO_2. If the composition of the fuel is known (*e.g.*, CH_4 or PMMA), a more exact value can be used. For the Cone Calorimeter, the data acquisition program lets the operator specify the value to use from a menu at runtime. For instance, for PMMA, this value would be 12.98 kJ/gO_2. The data reduction program uses the value in this field by default.
FAX	ORGANISE, PEOPLE	Facsimile number, including country code.
FILE	CONE, FURN, LIFT, ROOM	Reserved for a laboratory-specific identification of the test series to which the test belongs. This is typically a way to refer to the sponsorship of a test. In addition to FILE, some laboratories call this "Test Code," "Job Number," "Test Reference,".
FIRSTNAM	PEOPLE	First name of an individual.
FLAMEOUT	CONE, FURN, LIFT, ROOM	Time to flameout (s). This is the time of the last flameout if more than one ignition/flameout has occurred. The remaining values are recorded in the comments.
FLASH	ROOM	Time (s) when flashover is observed in the room.

Field Name	Table	Description
FLOW	CONE, FURN, ROOM	Flow rate of a gas burner.
FLUX	CONE, FURN, ROOM	Flux (kW/m^2).
FRAME	CONE	Denotes if the edge frame was used (meaningful only for horizontal orientations).
FULLNAME	PEOPLE	Composite name of an individual, *e.g.*, both first and last names. This is useful when it is necessary to reference a single field to get a complete name rather than separate first and last name fields. Separate fields are also included to provide easier sorting.
GRID	CONE	Denotes if the wire grid was used.
H2O180	CONE, FURN, ROOM	Average H_2O yield over 180 seconds subsequent to ignition (kg/kg).
H2O300	CONE, FURN, ROOM	Average H_2O yield over 300 seconds subsequent to ignition (kg/kg).
H2O60	CONE, FURN, ROOM	Average H_2O yield over 60 seconds subsequent to ignition (kg/kg).
HBR	CONE, FURN, ROOM	Similar to HCL, but for HBr.
HC180	CONE, FURN, ROOM	Average Δh_c over 180 seconds subsequent to ignition (kJ/g).
HC300	CONE, FURN, ROOM	Average Δh_c over 300 seconds subsequent to ignition (kJ/g).
HC60	CONE, FURN, ROOM	Average Δh_c over 60 seconds subsequent to ignition (kJ/g).
HCL	CONE, FURN, ROOM	The yield of HCl, as determined by batch analysis, typically by ion chromatography. Similar types of measurement as the SOOT field. These dimensionless quantities are determined using the raw data (grams of species), the ratio of mass flow rate through the solution to the main duct flow, and the mass of specimen loss during the test.
HCN	CONE, FURN, ROOM	Similar to HCL, but for HCN.
HF		See TUH.
IGNITOR	ROOM	Choices are: Standard sand burner (170 mm x 170 mm) Alternative sand burner (305 mm x 305 mm) Other

Field Name	Table	Description
IGNTYPE	FURN	Choices are: N: NORDTEST crib, 126 g W: NBS wastebasket burner, 50 kW methane T: FRS T-head burner, 25 kW propane 1: BSI Source #1, butane burner 2: BSI Source #2, butane burner 3: BSI Source #3, butane burner 4: BSI Source #4, 8.5 g crib (1.0 kW) 5: BSI Source #5, 17 g crib (1.9 kW) 6: BSI Source #6, 60 g crib (3.5 kW) 7: BSI Source #7, 126 g crib (7.0 kW) O: Other
INERTIA	LIFT	Thermal inertia ($kW^2 \cdot s \cdot m^{-4} \cdot K^{-2}$)
INITIAL	PEOPLE	Middle initial for an individual. May include two letters, *e.g.*, Mc.
INSTRID	INSTRUM	Assigned by FDMS at the local site when a test is being imported if the SERIAL field is not recognized as already existing. It has no meaning outside of the local site.
INSTRNO	CONE, FURN, LIFT, ROOM	INSTRID number from the INSTRUM table to provide unique identification for the test apparatus. Laboratories may have more than one of a given type of fire test apparatus.
INTERVAL	CONE, FURN, ROOM	Interval in seconds between two consecutive scans.
LABID	CONE, FURN, LIFT, ROOM	ORGID number from the ORGANISE table for the laboratory where the test was conducted.
LASTNAME	PEOPLE	The last name (surname, family name) of the individual.
LOCATION	ROOM	Location of the specimen. Choices are: Corner of room Wall center Other
MAINMAT	PRODUCT	Generic name for the main material (*e.g.*, rigid polyurethane foam) composing a product.
MAINUSE	PRODUCT	Main area in which the product is used. Choices are: Adhesives/Sealants Building Structure Building Fabric Cable Insulation Clothing/Textiles Decor/Ornament Film/Coating Furniture/Furnishings Marine Medical/Dental Military Packaging/Containers Service/Utilities Sports/Leisure Thermal Insulation Transport
MAKER	INSTRUM	Name of the company manufacturing this instrument. The name must match an organization in the ORGANISE table.
MAKERID	INSTRUM	ORGID number from the ORGANISE table for the company manufacturing this instrument.

Field Name	Table	Description
MANUFACT	PRODUCT	Name of the company manufacturing this product. The name must exist in the ORGANISE table.
MANUFID	PRODUCT	ORGID number from the ORGANISE table for the company manufacturing this product.
MASSF	CONE, FURN, LIFT, ROOM	Specimen mass at the end of the test (g).
MASSI	CONE, FURN, LIFT, ROOM	Specimen mass before the start of the test (g).
MASSLOSS	CONE, FURN, LIFT, ROOM	Specimen mass loss during the test (g).
MAXEXT	ROOM	Maximum value of the smoke extinction area flow rate (m^2/s).
MAXMDOT	CONE, FURN, ROOM	Peak mass loss rate $\dot{m}''$ ($g/s \cdot m^2$). The mass loss rate data is a numerically obtained multi-point estimate of the derivative of the mass loss. Consequently, this value has been smoothed to some extent.
MAXQDOT	CONE, FURN, ROOM	Peak rate of heat release $\dot{q}''$ (kW/m^2). For some materials (*e.g.*, charring materials), rate of heat release curves have more than one peak. This entry represents the highest value peak for the entire test.
MAXSIGMA	CONE, FURN, ROOM	Peak specific smoke extinction area σ_m (m^2/kg). As the raw σ_m records the actual turbulent fluctuations in the duct velocity, the instantaneous values of the extinction coefficient k have quite a bit of fluctuation. Therefore, the computed specific extinction area makes use of a smoothing algorithm.
MAXTIME	CONE, FURN, ROOM	Time (s) to the peak rate of heat release in MAXQDOT field.
MDOT180	CONE, FURN, ROOM	Average mass loss rate $\dot{m}''$ over 180 seconds subsequent to ignition ($g/s \cdot m^2$).
MDOT300	CONE, FURN, ROOM	Average mass loss rate $\dot{m}''$ over 300 seconds subsequent to ignition ($g/s \cdot m^2$).
MDOT60	CONE, FURN, ROOM	Average mass loss rate $\dot{m}''$ over 60 seconds subsequent to ignition ($g/s \cdot m^2$).
MORPHONE	PEOPLE	Telephone extension or an alternative telephone number for an individual.
MOUNT1	ROOM	Specifies the means of mounting. For example, "Glued with Brand X glue, 2 cm diameter globs, spaced at 30 cm."
MOUNT2	ROOM	Continuation of MOUNT1.
NEXTDATE	CALIB	Date of the next calibration.
NOTES1	INSTRUM	Special comments about the current or past use of this instrument. For example, "All data recorded between date X and Y are suspect."
NOTES2	INSTRUM	Additional instrument comments.
NOTES3	INSTRUM	Additional instrument comments.

Field Name	Table	Description
NOTES4	INSTRUM	Additional instrument comments.
NOTES5	INSTRUM	Additional instrument comments.
OFFICER	CALIB, CONE, FURN, LIFT, ROOM	The name of the laboratory officer responsible for a test. For CALIB, the individual who has signature authority to issue a calibration report. The name must match an individual in the PEOPLE table.
OFFID	CALIB, CONE, FURN, LIFT, ROOM	PERSONID number from the PEOPLE table for the laboratory officer responsible for a test. For CALIB, the individual who has signature authority to issue a calibration report.
OPERATOR	CALIB, CONE, FURN, LIFT, ROOM	The name of the person who performed the test. For CALIB, the individual who actually performed the calibration. The name must match an individual in the PEOPLE table.
OPERID	CALIB, CONE, FURN, LIFT, ROOM	PERSONID number from the PEOPLE table for the individual who performed the test. For CALIB, the individual who actually performed the calibration.
ORGANISE	ORGANISE, PEOPLE	Name of the organization (*e.g.*, National Institute of Standards and Technology).
ORGDATE	ORGANISE	When several sources of information are available for the same organization, it may not be clear which information is the most current. This field is updated only when it is known that the information in the record is current and correct. If **any** information being entered into an ORGANISE record is uncertain, this field should be left blank. Such a version of the record is preferentially discarded when a verified record becomes available.
ORGID	ORGANISE	Assigned to uniquely identify the organization.
ORIENT	CONE	Specimen orientation, horizontal or vertical.
OXYGEN	CONE, FURN, ROOM	Nominal value of the oxygen concentration in the enclosure around the heater and sample. The purpose is to enable quick searching of the database. For tests run at non-ambient oxygen concentration, the user may have installed a second oxygen meter to monitor the concentration of the inflow. Such data are recorded in a vector data channel. A typical value is 20.95%.
PERDATE	PEOPLE	When several sources of information are available for the same individual, it may not be clear which information is the most current. This field is updated only when it is known that the information in the record is current and correct. If **any** information being entered into a PEOPLE record is uncertain, this field should be left blank. Such a version of the record is preferentially discarded when a verified record becomes available.
PERSONID	PEOPLE	Assigned to uniquely identify an individual. This is necessary to distinguish two people with the same name.
PHI	LIFT	Flame heating parameter (kW^2/m^3).

Field Name	Table	Description
PHONE	ORGANISE, PEOPLE	Telephone, including country code.
PILOT	CONE	Indicates if ignition was piloted..
POSTCODE	ORGANISE, PEOPLE	Postal code (Zip code for USA).
PRDATE	PRODUCT	When several sources of information are available for the same product, it may not be clear which information is the most current. This field is updated only when it is known that the information in the record is current and correct. If any information being entered into a PRODUCT record is uncertain, this field should be left blank. Such a version of the record is preferentially discarded when a verified record becomes available.
PRIVATE	CONE, FURN, LIFT, ROOM	Allows a laboratory to define the level of access by other organizations to test results in the database. Choices are: • Allow the data to be exported without allowing modifications. • Purge any test information which might identify the manufacturer before allowing export. • Do not allow export under any circumstances.
PRODENSI	PRODUCT	Density of the product (kg/m^3).
PRODESC1	PRODUCT	Product description.
PRODESC2	PRODUCT	Continuation of product description.
PRODESC3	PRODUCT	Continuation of product description.
PRODESC4	PRODUCT	Continuation of product description.
PRODESC5	PRODUCT	Continuation of product description.
PRODID	PRODUCT	Assigned to uniquely identify the test product. This is necessary since many products have similar names which are difficult to distinguish.
PRODID1	CONE, FURN, LIFT, ROOM	PRODID value from PRODUCT table for the main product composing the sample.
PRODID2	CONE, FURN, LIFT, ROOM	PRODID value from PRODUCT table for the secondary product composing the sample.
PRODNAME	PRODUCT	Commercial name of the test product.
PRODUCT1	CONE, FURN, LIFT, ROOM	The name of the main product composing the sample. The name must match a product in the PRODUCT table.
PRODUCT2	CONE, FURN, LIFT, ROOM	The name of the secondary product composing the sample. The name must match a product in the PRODUCT table.
PROTHICK	PRODUCT	Product thickness (mm).
QDOT180	CONE, FURN, ROOM	Average rate of heat release $\dot{q}''$ over 180 seconds subsequent to ignition (kW/m^2).

Field Name	Table	Description
QDOT300	CONE, FURN, ROOM	Average rate of heat release q" over 300 seconds subsequent to ignition (kW/m^2).
QDOT60	CONE, FURN, ROOM	Average rate of heat release q" over 60 seconds subsequent to ignition (kW/m^2).
QIG	LIFT	Minimum flux for ignition (kW/m^2).
QSMIN	LIFT	Minimum flux for spread (kW/m^2).
RECEIVED	CONE, FURN, LIFT, ROOM	Date test results were received.
REGION	ORGANISE, PEOPLE	State for USA, county for UK, etc.
REPDATE	CONE, FURN, LIFT, ROOM	Date the test was reported.
RHCOND	CONE, FURN, LIFT, ROOM	Relative humidity for specimen conditioning (%). This is important if, for example, the specimens were oven-dried at RH=0.
RHTEST	CONE, FURN, LIFT, ROOM	Relative humidity of the supply air for conducting the test (%). In the case of special, controlled atmospheres, this can be user selected.
SCANS	CONE, FURN, ROOM	Total number of scans for the test. For Cone Calorimeter, value is entered by CONERUN.
SERIAL	INSTRUM	Identical to the header line "SERIAL NAME" imported as part of the raw data.
SIGMA180	CONE, FURN, ROOM	Average σ_m over 180 seconds subsequent to ignition (m^2/kg).
SIGMA300	CONE, FURN, ROOM	Average σ_m over 300 seconds subsequent to ignition (m^2/kg).
SIGMA60	CONE, FURN, ROOM	Average σ_m over 60 seconds subsequent to ignition (m^2/kg).
SOOT	CONE, FURN, ROOM	Mass of the soot deposited on the soot filter during the test divided by the mass of specimen loss during the test.
SPCONTID	CONE, FURN, LIFT, ROOM	PERSONID number from the PEOPLE table for the contact person at the sponsoring organization.
SPDATE1	CONE, FURN, LIFT, ROOM	Supply date for product 1.
SPDATE2	CONE, FURN, LIFT, ROOM	Supply date for product 2.
SPONCONT	CONE, FURN, LIFT, ROOM	Name of the contact person at the sponsoring organization. This name must match an individual in the PEOPLE table.
SPONID	CONE, FURN, LIFT, ROOM	ORGID number from the ORGANISE table for the sponsoring organization.
SPONSOR	CONE, FURN, LIFT, ROOM	Name of the sponsoring organization. This name must match an organization in the ORGANISE table.
SUMEXT	ROOM	Total smoke extinction area released during the entire test (m^2).

Field Name	Table	Description
SURFDENS	ROOM	When thin textiles, papers, etc., are covering some standard substrate in a ROOM test, it is most appropriate to describe them by their surface density (kg/m^2).
TELEX	ORGANISE, PEOPLE	Telex number.
TEMPCOND	CONE, FURN, LIFT, ROOM	Temperature (°C) for specimen conditioning.
TEMPTEST	CONE, FURN, LIFT, ROOM	Temperature (°C) of the supply air for conducting the test.
TEST	CONE, FURN, LIFT, ROOM	Serial test number assigned. It is specific to the laboratory and to an instrument. For the Cone Calorimeter, it is assigned by the CONERUN software.
TESTDATE	CONE, FURN, LIFT, ROOM	Date the original test was run.
THICK	CONE, FURN, LIFT, ROOM	Specimen thickness (m).
TIG	LIFT	Minimum temperature for ignition (°C).
TIGN	CONE, FURN, LIFT, ROOM	Time to ignition, defined as sustained flaming (s). This is the time of first ignition if more than one ignition/flameout has occurred. The remaining values are recorded with the comments.
TOTLHEAT	CONE, FURN, ROOM	Total heat released during the entire test (MJ).
TSMIN	LIFT	Minimum temperature for spread (°C).
TSTAR	LIFT	Characteristic equilibrium or thermal steady state time (s).
TUH	CONE, FURN, ROOM	Similar to HCL, but for total unburned fuel. The HF field originally allocated to hydrogen fluoride measurements was reallocated to total unburned hydrocarbons, TUH, to conform to current usage in laboratories.
USER1$	CONE, FURN, LIFT, ROOM	Additional user defined strings.
USER2$	CONE, FURN, LIFT, ROOM	Contains user defined strings. This could be a variable name identifying the value in one of the user defined numeric fields: USERNUM1, USERNUM2, USERNUM3. Information entered is site-specific. It is not exported by the FDMS export module since it has no meaning in other implementations of FDMS.
USER3$	CONE, FURN, LIFT, ROOM	Additional user defined strings.
USERNUM1	CONE, FURN, LIFT, ROOM	Contains user defined numeric data. For example, for a given test series the yield of NO_x may be one of the measurements. The user could attribute this field to the test-average NO_x yield. Information entered is site-specific. It is not exported by the FDMS export module since it has no meaning in other implementations of FDMS.
USERNUM2	CONE, FURN, LIFT, ROOM	Additional user defined numeric data.
USERNUM3	CONE, FURN, LIFT, ROOM	Additional user defined numeric data.

Field Name	Table	Description
VERSION	CONE, FURN, LIFT, ROOM	FDMS version number. Required to identify the correct version of the data reduction routines.
ZNUMBER	CONE, FURN, LIFT, ROOM	Mechanism by which the DOS vector data file is associated with a specific test. The name of the DOS file is the ZNUMBER with a prefix of "Z".

7. References

[1] Babrauskas, V., Peacock, R.D., Janssens, M., and Batho, N.E., Standardizing the Exchange of Fire Data - The FDMS, *Fire and Materials* **15**, 85-92 (1991).

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[4] Dark Star Research Ltd., Penley, Clwyd, England.

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Fire Data Management System, FDMS, is a computer database specifically designed to store and retrieve fire test results. This guide provides detailed descriptions of the current file formats as well as revisions planned for the immediate future.

KEY WORDS (MAXIMUM 9 KEY WORDS; 28 CHARACTERS AND SPACES EACH; ALPHABETICAL ORDER; CAPITALIZE ONLY PROPER NAMES)

computer database, cone calorimeter, export, furniture calorimeter, import, LIFT apparatus, room/corner test, scalar data, vector data

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