

④ LEVEL III



ADA 080898

DDC FILE COPY

VOLUME II
A SCREENING CRITERION FOR
DELIVERED SOURCE IN MILITARY SOFTWARE
(APPENDICES A THROUGH H)

Richard J. Pariseau
Software and Computer Directorate
NAVAL AIR DEVELOPMENT CENTER
Warminster, Pennsylvania 18974

14 November 1979

TECHNICAL NOTE
AIRTASK NO. ZF61412001
Work Unit No. GC333

DTIC
ELECTE
S FEB 22 1980 D
B

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED.

THIS DOCUMENT IS BEST QUALITY PRACTICABLE.
THE COPY FURNISHED TO DDC CONTAINED A
SIGNIFICANT NUMBER OF PAGES WHICH DO NOT
REPRODUCE LEGIBLY.
Prepared for
NAVAL AIR SYSTEMS COMMAND
Department of the Navy
Washington, DC 20361

80 2 21 016

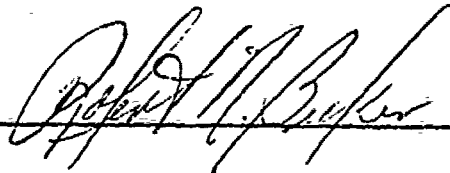
NOTICES

REPORT NUMBERING SYSTEM - The numbering of technical project reports issued by the Naval Air Development Center is arranged for specific identification purposes. Each number consists of the Center acronym, the calendar year in which the number was assigned, the sequence number of the report within the specific calendar year, and the official 2-digit correspondence code of the Command Office or the Functional Directorate responsible for the report. For example: Report No. NADC-78015-20 indicates the fifteenth Center report for the year 1978, and prepared by the Systems Directorate. The numerical codes are as follows:

CODE	OFFICE OR DIRECTORATE
00	Commander, Naval Air Development Center
01	Technical Director, Naval Air Development Center
02	Comptroller
10	Directorate Command Projects
20	Systems Directorate
30	Sensors & Avionics Technology Directorate
40	Communication & Navigation Technology Directorate
50	Software Computer Directorate
60	Aircraft & Crew Systems Technology Directorate
70	Planning Assessment Resources
80	Engineering Support Group

PRODUCT ENDORSEMENT - The discussion or instructions concerning commercial products herein do not constitute an endorsement by the Government nor do they convey or imply the license or right to use such products.

APPROVED BY:



DATE:

14 Nov 1979

DISCLAIMER NOTICE

**THIS DOCUMENT IS BEST QUALITY
PRACTICABLE. THE COPY FURNISHED
TO DDC CONTAINED A SIGNIFICANT
NUMBER OF PAGES WHICH DO NOT
REPRODUCE LEGIBLY.**

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER (14) NADC-79163-50-1002-2	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) (6) A Screening Criterion for Delivered Source in Military Software, Volume II, Appendices A through H.	5. TYPE OF REPORT & PERIOD COVERED (9) TECHNICAL NOTE	
7. AUTHOR(s) (10) Richard J. Pariseau	6. PERFORMING ORG. REPORT NUMBER	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Software and Computer Directorate Naval Air Development Center Warminster, PA 18974	8. CONTRACT OR GRANT NUMBER(s)	
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Air Systems Command Department of the Navy Washington, DC 20361	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS AIRTASK NO. ZF61412001 Work Unit No. GC333	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) (16) F61412	12. REPORT DATE (11) 14 Nov 1979	
(17) ZF61412, 001	13. NUMBER OF PAGES 98	
15. SECURITY CLASS. (of this report) UNCLASSIFIED		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED. (12) 982		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES Volume II; Appendices A,B,C,D,E,F,G,H.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Software Reliability Investigation Repair Improvement		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The goal of this study is to identify measurable characteristics of the program source code that indicate the likelihood of future changes to the program modules. These changes include both repair of software errors and improvement in software performance. Source code data and module change data were analyzed to correlate the source code characteristics with the number of changes made to the modules. (Continued on reverse.)		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE
S/N 0102-LF-014-6601

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

393538

over
set

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

The following conclusions were reached: (1) a pair of source code parameters (size/structure) in a linear relationship is a useful predictor of the number of changes, (2) a single parameter is not sufficient as a predictor of future change and, (3) multiple parameters and non-linear relationships do not significantly improve the prediction over the two parameter linear case.

The results can be made an acceptance criterion for delivered source modules prior to module testing. This application would support present Navy efforts to improve software reliability and maintainability through engineering techniques applied as early as possible in the software development process.

S/N 0102- LF-014-6601

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

TABLE OF CONTENTS

Appendix		Page
A	Sample Change Request	A-1
B	Sample Change Request Data Sheet	B-1
C	Raw Data	C-1
D	Descriptive Statistics for the Data	D-1
E	Correlation Coefficients Between Data Items and Measures of Change	E-1
F	Results for the Two Parameter Linear Fit	F-1
G	Results for the Multi-Parameter Linear Fit	G-1
H	Results for the Nonlinear Fit	H-1

ACCESSION for	
NTIS	White Section ☒
DDC	Buff Section ☐
UNANNOUNCED	
JUSTIFICATION	
BY	
DISTRIBUTION/AVAILABILITY CODES	
Dist.	AVAIL. and/or SPECIAL
A	23 CP

NADC-79163-50

APPENDIX A
SAMPLE CHANGE REQUEST

DSCP CHANGE REQUEST - 45

Originator's Name: Norma Stopyra

Page 1 of 1

Module: DUBφφINS (SDG-75)

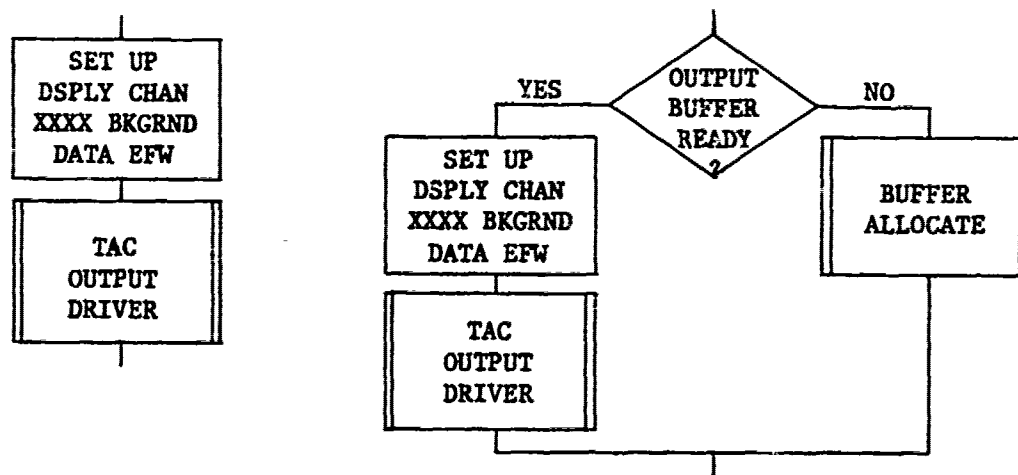
Date: 3/11/74

Title of Change:

Description of Change:

Replace (SDG-75 2B3)

with



Justification for Change:

The program is calling the tactical output driver to send a nonexistent output buffer (word count = φ) whenever the 1st buffer transfer type is an error requiring the maintenance module to be called. In such cases, the output buffer should be released and the program should return to the calling module after other recovery processing is completed.

Implementation Period From 3/11/74

To 3/11/74

Team Initials:

Approval:

NADC-79163-50

APPENDIX B

SAMPLE CHANGE REQUEST DATA SHEET

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
--	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

NADC-79163-50

APPENDIX C

RAW DATA

ABBREVIATIONS OF DATA ITEMS -----

CHANGE DATA

- | | | |
|----|-----|----------------------|
| 1. | TC: | TOTAL CHANGES |
| 2. | DC: | DESIGN CHANGES |
| 3. | CC: | CODE CHANGES |
| 4. | UC: | UNKNOWN CHANGE AREAS |
| 5. | KE: | KNOWN ERRORS |
| 6. | KM: | KNOWN MODIFICATIONS |
| 7. | UT: | UNKNOWN TYPE ERRORS |
| 8. | PE: | POSSIBLE ERRORS |

SOURCE IMAGE DATA

- | | | | |
|-----|-------|---|--|
| 1. | NC | : | NUMBER OF CARDS |
| 2. | NCM | : | NUMBER OF COMMENTS |
| 3. | PS | : | NUMBER OF PROCESSED CARDS (SOURCE) |
| 4. | R-UR | : | REGISTERS-UNIQUE REFERENCES |
| 5. | R-TR | : | REGISTERS-TOTAL REFERENCES |
| 6. | NB-UR | : | NONBRANCHING OPCODES-UNIQUE REFERENCES |
| 7. | NR-TR | : | NONBRANCHING OPCODES-TOTAL REFERENCES |
| 8. | B-UR | : | BRANCHING OPCODES-UNIQUE REFERENCES |
| 9. | B-TR | : | BRANCHING OPCODES-TOTAL REFERENCES |
| 10. | D-UR | : | DIRECTIVE OPCODES-UNIQUE REFERENCES |
| 11. | D-TR | : | DIRECTIVE OPCODES-TOTAL REFERENCES |
| 12. | AO-UR | : | ALL OPCODES-UNIQUE REFERENCES |
| 13. | AO-TR | : | ALL OPCODES-TOTAL REFERENCES |
| 14. | LN-UR | : | LOCAL NAMES-UNIQUE REFERENCES |
| 15. | LN-TR | : | LOCAL NAMES-TOTAL REFERENCES |
| 16. | GN-UR | : | GLOBAL NAMES-UNIQUE REFERENCES |
| 17. | GN-TR | : | GLOBAL NAMES-TOTAL REFERENCES |
| 18. | N-UR | : | NUMBERS-UNIQUE REFERENCES |
| 19. | N-TR | : | NUMBERS-TOTAL REFERENCES |
| 20. | LE-UR | : | LOCAL EXPRESSIONS-UNIQUE REFERENCES |
| 21. | LE-TR | : | LOCAL EXPRESSIONS-TOTAL REFERENCES |
| 22. | GE-UR | : | GLOBAL EXPRESSIONS-UNIQUE REFERENCES |
| 23. | GE-TR | : | GLOBAL EXPRESSIONS-TOTAL REFERENCES |
| 24. | AV-UR | : | ALL VARIABLES-UNIQUE REFERENCES |
| 25. | AV-TR | : | ALL VARIABLES-TOTAL REFERENCES |
| 26. | ITE | : | NUMBER OF IF-THEN-ELSEs |
| 27. | DOW | : | NUMBER OF DOWHILES |
| 28. | DOU | : | NUMBER OF DOUNTILS |
| 29. | MN | : | MCCABE NUMBER |
| 30. | PC | : | PROGRAM CLARITY |

MODULE NAME	CHANGE DATA SOURCE IMAGE DATA	RAW DATA -----																PAGE	
		TC GN-UR	NC	NCH 60-TR	DC PS N-UR	R-UR N-TR	CC R-TR LE-UR	N3-UR LE-TR	UC NB-TR GE-UR	B-TR AV-UR	KE D-UR AV-TR	D-TR ITE	KM AO-UR DOM	UT AO-TR DOU	LN-UR 4N	LN-TR PC	PE		
1	AAPR01JH CHANGE DATA SOURCE IMAGE DATA	15. 1266. 3.		869. 5.	327. 25.	14. 37.	12. 60.	11. 211.	23. 30.	0. 147.	12. 0.	11. 104.	11. 142.	0. 47.	39. 3.	327. 0.	4. 0.	108. 51.	15. 298. 440608.
2	AAPR05JH CHANGE DATA SOURCE IMAGE DATA	3. 134. 2.		93. 2.	36. 12.	0. 12.	9. 13.	31. 0.	11. 0.	0. 0.	4. 0.	6. 26.	0. 0.	0. 12.	18. 1.	36. 0.	0. 0.	12. 3.	0. 21. 10164.
3	AAPR06JH CHANGE DATA SOURCE IMAGE DATA	1. 60. 1.		46. 1.	13. 5.	1. 5.	5. 5.	10. 0.	5. 0.	7. 0.	2. 0.	2. 13.	0. 0.	0. 4.	8. 0.	13. 0.	1. 10.	7. 1.	1. 10. 1205.
4	AAPR07JH CHANGE DATA SOURCE IMAGE DATA	1. 56. 1.		46. 1.	10. 2.	0. 2.	4. 4.	6. 0.	3. 0.	0. 0.	2. 0.	2. 8.	1. 0.	0. 0.	7. 0.	10. 0.	0. 0.	5. 1.	1. 8. 683.
5	AAPR08JH CHANGE DATA SOURCE IMAGE DATA	1. 60. 1.		46. 1.	13. 3.	0. 3.	6. 3.	14. 0.	6. 0.	9. 0.	2. 0.	2. 10.	1. 0.	0. 0.	10. 0.	13. 0.	0. 0.	5. 1.	1. 7. 1395.
6	AAPR09JH CHANGE DATA SOURCE IMAGE DATA	3. 255. 0.		174. 0.	67. 15.	2. 15.	11. 21.	53. 0.	10. 0.	29. 0.	5. 0.	12. 37.	2. 0.	0. 26.	18. 1.	67. 0.	1. 0.	22. 8.	3. 53. 27923.
7	AAPR10JH CHANGE DATA SOURCE IMAGE DATA	1. 228. 2.		155. 2.	58. 9.	1. 9.	18. 18.	42. 1.	15. 1.	32. 0.	7. 0.	13. 34.	1. 0.	0. 7.	24. 0.	58. 0.	0. 0.	22. 8.	1. 45. 30350.
8	AAPR11JH CHANGE DATA SOURCE IMAGE DATA	0. 86. 0.		72. 0.	14. 2.	0. 2.	4. 2.	5. 1.	2. 1.	0. 0.	5. 0.	8. 14.	0. 0.	0. 2.	9. 0.	14. 0.	0. 0.	11. 3.	0. 15. 1012.
9	ACCD01CS CHANGE DATA SOURCE IMAGE DATA	1. 100. 2.		65. 2.	32. 13.	0. 13.	5. 16.	20. 0.	10. 0.	13. 0.	3. 0.	4. 24.	0. 0.	1. 15.	17. 0.	32. 1.	0. 0.	9. 2.	0. 19. 8213.
10	ACD001CS CHANGE DATA SOURCE IMAGE DATA	13. 470. 9.		279. 13.	183. 26.	7. 26.	13. 67.	169. 7.	29. 7.	118. 2.	10. 2.	32. 92.	5. 0.	3. 12.	44. 0.	183. 2.	5. 15.	48. 15.	10. 107. 202548.
11	ACF001CS CHANGE DATA SOURCE IMAGE DATA	1. 315. 5.		215. 5.	94. 14.	1. 14.	14. 25.	94. 4.	21. 5.	58. 0.	10. 0.	18. 45.	1. 0.	0. 8.	36. 0.	94. 2.	0. 11.	22. 11.	1. 48. 96143.
12	ACI001CS CHANGE DATA SOURCE IMAGE DATA	1. 235. 8.		163. 9.	68. 14.	1. 14.	12. 22.	53. 0.	20. 0.	38. 1.	7. 1.	16. 41.	0. 0.	1. 4.	31. 0.	68. 0.	0. 0.	18. 5.	0. 39. 44508.

PAGE 1

RAW DATA

RAW DATA

MODULE NAME		CHANGE DATA SOURCE IMAGE DATA		MODULES																LN-UR UN		LN-TR UN		PC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
				TC	NC	GN-TR	NCM	PS	DC	R-UR	R-TR	CC	NR-TR	NR-UR	UC	GE-TR	H-UR	B-TR	KE							D-TR	AO-UR	UT	DOU	ITE	KM	DOU	ITE	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU	ITE	KM	DOU

RAW DATA

MODULF NAME	CHANGE DATA SOURCE IMAGE DATA	MODULES 25 TO 36										PAGE 1		LN-UR MN	LN-TR PC
		TC GN-UR	NC GN-UR	DC PS N-UR	R-UR N-TR	CC R-TR LE-UR	CC N8-UR LE-TR	UC N8-TR GE-UR	B-UR GE-TR	KE B-TR AV-UR	D-UR AV-TR	KM D-TR ITE	AO-UR DOU		
25 ACV090CS	CHANGE DATA SOURCE IMAGE DATA	0. 40. 0.	33. 0.	0. 7. 2.	3. 3. 0.	0. 3. 0.	2. 0. 0.	0. 3. 0.	2. 0. 0.	0. 2. 8.	1. 11. 0.	0. 1. 0.	0. 7. 0.	6. 2. 0.	0. 8. 267.
26 ACV110CS	CHANGE DATA SOURCE IMAGE DATA	2. 55. 0.	41. 0.	1. 14. 3.	3. 6. 0.	1. 6. 1.	2. 1. 0.	0. 6. 0.	4. 0. 0.	0. 4. 13.	1. 21. 0.	1. 7. 0.	1. 14. 0.	9. 3. 0.	1. 14. 1095.
27 ACV060CS	CHANGE DATA SOURCE IMAGE DATA	0. 54. 0.	43. 0.	0. 11. 3.	3. 4. 0.	0. 4. 0.	2. 0. 0.	0. 4. 0.	2. 0. 0.	0. 11. 0.	1. 17. 0.	0. 5. 0.	0. 11. 0.	8. 3. 0.	0. 13. 510.
28 ACV011CS	CHANGE DATA SOURCE IMAGE DATA	1. 52. 0.	38. 0.	1. 14. 3.	3. 6. 0.	0. 6. 0.	2. 0. 0.	0. 6. 0.	2. 0. 0.	0. 4. 12.	1. 21. 0.	0. 5. 0.	1. 14. 0.	9. 3. 0.	1. 15. 797.
29 ACV112CS	CHANGE DATA SOURCE IMAGE DATA	1. 61. 0.	44. 0.	1. 17. 5.	3. 6. 0.	0. 6. 0.	3. 0. 0.	0. 6. 0.	3. 0. 0.	0. 5. 17.	1. 27. 0.	0. 7. 0.	1. 17. 0.	12. 3. 0.	1. 21. 1373.
30 ACV116CS	CHANGE DATA SOURCE IMAGE DATA	1. 58. 0.	41. 0.	1. 17. 5.	3. 6. 0.	0. 6. 0.	3. 0. 0.	0. 6. 0.	3. 0. 0.	0. 5. 17.	1. 27. 0.	0. 7. 0.	1. 17. 0.	12. 3. 0.	1. 21. 1373.
31 ACV081CS	CHANGE DATA SOURCE IMAGE DATA	1. 56. 0.	42. 0.	1. 14. 3.	3. 6. 0.	0. 6. 1.	2. 1. 0.	0. 6. 0.	2. 0. 0.	0. 4. 13.	1. 21. 0.	0. 5. 0.	1. 14. 0.	9. 3. 0.	1. 14. 760.
32 ACV011CS	CHANGE DATA SOURCE IMAGE DATA	0. 36. 0.	29. 0.	0. 7. 2.	3. 3. 0.	0. 3. 0.	2. 0. 0.	0. 3. 0.	2. 0. 0.	0. 2. 8.	1. 11. 0.	0. 5. 0.	0. 7. 0.	6. 2. 0.	0. 8. 267.
33 ACV050CS	CHANGE DATA SOURCE IMAGE DATA	0. 41. 0.	34. 0.	0. 7. 2.	3. 3. 0.	0. 3. 0.	2. 0. 0.	0. 3. 0.	2. 0. 0.	0. 2. 8.	1. 11. 0.	0. 5. 0.	0. 7. 0.	6. 2. 0.	0. 8. 267.
34 ACV503CS	CHANGE DATA SOURCE IMAGE DATA	0. 40. 0.	33. 0.	0. 7. 2.	3. 3. 0.	0. 3. 0.	2. 0. 0.	0. 3. 0.	2. 0. 0.	0. 2. 8.	1. 11. 0.	0. 5. 0.	0. 7. 0.	6. 2. 0.	0. 8. 267.
35 ACV080CS	CHANGE DATA SOURCE IMAGE DATA	0. 39. 0.	32. 0.	0. 7. 2.	3. 3. 0.	0. 3. 0.	2. 0. 0.	0. 3. 0.	2. 0. 0.	0. 2. 8.	1. 11. 0.	0. 5. 0.	0. 7. 0.	6. 2. 0.	0. 8. 267.
36 ACV115CS	CHANGE DATA SOURCE IMAGE DATA	1. 13. 0.	12. 0.	1. 1. 0.	0. 0. 0.	0. 0. 0.	0. 0. 0.	0. 0. 0.	1. 0. 0.	0. 1. 2.	0. 2. 0.	0. 1. 0.	1. 1. 0.	2. 1. 0.	1. 2. 2.

MODULE NAME	SOURCE DATA	RAW DATA										MODULES										PAGE 4			
		IC	NCM	DC	R-UR	R-TR	CC	UC	KE	D-UR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR
37	ASPR01CS	CHANGE DATA	1033	8	358	14	281	36	192	0	13	7	5	388	40	0	54	358	1	88	217	432808	43	1	358
38	ASPR01CS	SOURCE IMAGE DATA	10	33	118	8	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	ASPR01CS	CHANGE DATA	99	72	27	3	18	9	13	0	6	8	2	34	3	0	17	27	0	15	27	0	15	0	0
40	ASPR01CS	SOURCE IMAGE DATA	1	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	ASPR01CS	CHANGE DATA	113	66	17	24	32	12	20	0	4	0	3	42	1	0	19	47	0	12	18	13987	3	0	0
42	ASPR01CS	SOURCE IMAGE DATA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	ASPR01CS	CHANGE DATA	140	91	42	9	43	20	30	0	5	6	4	35	2	0	29	42	0	10	17	26613	4	0	0
44	ASPR01CS	SOURCE IMAGE DATA	2	2	8	15	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	ASPR01CS	CHANGE DATA	145	82	58	23	44	14	33	0	8	11	3	62	5	0	25	58	1	13	26	30763	6	0	0
46	ASPR01CS	SOURCE IMAGE DATA	5	12	15	0	0	0	1	0	1	34	0	0	0	0	0	0	0	0	0	0	0	0	0
47	ASPR01CS	CHANGE DATA	190	120	64	10	42	15	34	0	7	21	3	73	7	0	25	64	0	17	36	29131	8	0	0
48	ASPR01CS	SOURCE IMAGE DATA	9	15	19	21	0	0	1	0	1	46	0	0	0	0	0	0	0	0	0	0	0	0	0
49	ASPR01CS	CHANGE DATA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	ASPR01CS	SOURCE IMAGE DATA	120	76	38	9	27	9	22	0	6	10	3	45	4	0	18	38	0	10	19	10893	5	0	0
51	ASPR01CS	CHANGE DATA	7	12	10	12	0	0	2	0	2	29	0	0	0	0	0	0	0	0	0	0	0	0	0
52	ASPR01CS	SOURCE IMAGE DATA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	ASPR01CS	CHANGE DATA	125	85	35	7	24	12	20	0	6	9	3	39	3	1	21	35	0	9	17	11604	5	0	0
54	ASPR01CS	SOURCE IMAGE DATA	7	11	9	11	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0
55	ASPR01CS	CHANGE DATA	3	84	38	6	19	5	16	0	5	16	3	46	4	0	13	38	0	11	21	6787	5	0	0
56	ASPR01CS	SOURCE IMAGE DATA	8	13	9	10	0	0	2	0	2	30	0	0	0	0	0	0	0	0	0	0	0	0	0
57	ASPR01CS	CHANGE DATA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	ASPR01CS	SOURCE IMAGE DATA	45	37	14	4	6	5	5	0	5	5	3	18	1	0	13	14	0	7	10	1632	2	0	0
59	ASPR01CS	CHANGE DATA	3	4	4	4	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0
60	ASPR01CS	SOURCE IMAGE DATA	5	48	24	5	14	8	9	0	5	2	4	28	1	1	17	24	1	9	13	5888	3	0	0
61	ASPR01CS	CHANGE DATA	2	3	4	11	0	0	1	0	1	16	0	0	0	0	0	0	0	0	0	0	0	0	0
62	ASPR01CS	SOURCE IMAGE DATA	5	69	52	13	57	14	36	0	5	12	2	46	4	0	21	52	1	10	18	23857	5	0	0
63	ASPR01CS	CHANGE DATA	121	5	12	18	0	0	2	0	2	29	0	0	0	0	0	0	0	0	0	0	0	0	0
64	ASPR01CS	SOURCE IMAGE DATA	5	6	12	18	0	0	2	0	2	29	0	0	0	0	0	0	0	0	0	0	0	0	0

MODULE NAME		CHANGE DATA		RAW DATA												MODULES 49 TO 60				PAGE 5	
SOURCE IMAGE DATA		SOURCE IMAGE DATA		-----																	
TC	NC	DC	PS	R-UR	R-TR	CC	NB-UR	UC	KE	D-UR	AV-TR	ITE	DOM	AO-TR	UT	LN-UR	PC				
GN-UR	GN-TR	N-UR	N-TR	N-TR	LE-UR	LE-TR	GE-UR	GE-TR	AV-UR	AV-TR					DOU	MN					
49	CRC001AS	0.	0.	0.	0.	0.	0.	0.	0.	3.	0.	0.	0.	0.	0.	16.	0.				
	SOURCE IMAGE DATA	150.	51.	7.	29.	9.	22.	8.	19.	61.	20.	0.	0.	51.	0.	7.	34.				
		7.	9.	13.	0.	0.	0.	0.	32.								19141.				
50	CRD001AS	2.	2.	5.	0.	0.	0.	0.	0.	3.	15.	0.	0.	1.	1.	7.	1.				
	SOURCE IMAGE DATA	60.	20.	5.	15.	8.	11.	4.	6.	24.	0.	3.	15.	20.	0.	7.	3801.				
		5.	5.	5.	0.	0.	2.	3.	19.			1.	0.	0.	0.	2.					
51	CRF001AS	4.	2.	10.	2.	0.	0.	0.	3.	3.	25.	1.	0.	0.	0.	10.	3.				
	SOURCE IMAGE DATA	210.	72.	20.	61.	16.	45.	6.	19.	72.	0.	8.	25.	72.	0.	7.	21.				
		14.	15.	20.	0.	0.	1.	4.	40.			6.	0.	0.	0.		42457.				
52	CRF001AS	0.	0.	6.	0.	0.	0.	0.	0.	3.	16.	0.	0.	0.	0.	12.	0.				
	SOURCE IMAGE DATA	130.	31.	6.	13.	6.	8.	7.	17.	40.	1.	6.	16.	31.	0.	6.	28.				
		8.	6.	6.	0.	0.	0.	0.	26.			4.	1.	0.	0.		6216.				
53	CRG001AS	0.	0.	0.	0.	0.	0.	0.	0.	2.	4.	0.	0.	0.	0.	3.	0.				
	SOURCE IMAGE DATA	35.	6.	1.	0.	0.	0.	2.	4.	7.	0.	2.	4.	6.	0.	1.	90.				
		3.	1.	1.	0.	0.	0.	0.	7.			0.	0.	0.	0.						
54	CRK001AS	0.	0.	0.	0.	0.	0.	0.	0.	3.	14.	0.	0.	0.	0.	6.	0.				
	SOURCE IMAGE DATA	95.	25.	6.	17.	8.	13.	3.	9.	27.	0.	3.	14.	25.	0.	2.	4093.				
		10.	13.	5.	1.	1.	0.	0.	22.			1.	0.	0.	0.						
55	CRL001AS	2.	2.	7.	0.	0.	0.	0.	1.	3.	27.	1.	0.	0.	0.	12.	1.				
	SOURCE IMAGE DATA	170.	66.	19.	57.	18.	45.	6.	15.	71.	0.	6.	27.	66.	0.	5.	23.				
		11.	29.	14.	0.	0.	0.	0.	37.			4.	0.	0.	0.		46854.				
56	CCR001AS	2.	2.	4.	0.	0.	0.	0.	0.	3.	15.	1.	0.	1.	1.	6.	1.				
	SOURCE IMAGE DATA	85.	28.	6.	23.	8.	17.	4.	8.	30.	0.	3.	15.	28.	0.	2.	6635.				
		11.	16.	5.	0.	0.	0.	0.	22.			1.	0.	0.	0.						
57	CCC001AS	10.	4.	14.	6.	25.	0.	0.	7.	3.	39.	2.	0.	1.	1.	33.	82.				
	SOURCE IMAGE DATA	420.	207.	67.	173.	0.	137.	11.	49.	215.	0.	21.	39.	207.	0.	19.	326058.				
		18.	29.	29.	0.	0.	4.	5.	84.			18.	0.	0.	0.						
58	CCF001AS	0.	0.	2.	0.	0.	0.	0.	0.	3.	11.	0.	0.	0.	0.	10.	0.				
	SOURCE IMAGE DATA	90.	27.	5.	9.	4.	7.	4.	16.	34.	0.	4.	11.	27.	0.	4.	17.				
		9.	4.		0.	0.	0.	0.	23.			3.	0.	0.	0.		3424.				
59	CCF001AS	0.	0.	8.	0.	0.	0.	0.	0.	3.	20.	0.	0.	0.	0.	6.	0.				
	SOURCE IMAGE DATA	130.	52.	14.	56.	13.	40.	4.	8.	44.	0.	4.	20.	52.	0.	3.	9.				
		12.	11.	14.	0.	0.	0.	0.	29.			2.	0.	0.	0.		23562.				
60	CCG001AS	0.	0.	0.	0.	0.	0.	0.	0.	2.	4.	0.	0.	0.	0.	0.	0.				
	SOURCE IMAGE DATA	30.	5.	1.	0.	0.	0.	2.	3.	6.	0.	0.	4.	5.	0.	3.	0.				
		2.	1.	1.	0.	0.	0.	0.	6.			0.	0.	0.	0.		73.				

MODULE NAME	CHANGE DATA SOURCE IMAGE DATA	RAW DATA -----										MODULES 61 TO 72										PAGE	
		TC GN-UR	NCM GN-TP	DC PS N-UP	R-UR N-TR	CC R-TP LF-UR	NR-UR LE-TR	UC NR-TP GE-UR	R-UR GE-TP	KE R-TR AV-UR	D-UR AV-TP	ITF	AO-UR DOU	UT AO-TR DOU	LN-UR MN	LN-TP PC							
61 CCH001AS	CHANGE DATA	0.	102.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.	0.	0.							
	SOURCE IMAGE DATA	190.	20.	83.	10.	81.	20.	61.	6.	12.	5.	10.	31.	83.	15.	31.							
62 CCH001AS	CHANGE DATA	0.	64.	0.	14.	0.	18.	36.	4.	10.	3.	6.	25.	52.	7.	11.							
	SOURCE IMAGE DATA	120.	22.	52.	20.	44.	1.	0.	0.	34.	54.	2.	0.	0.	3.	23495.							
63 CCH001AS	CHANGE DATA	2.	56.	2.	11.	0.	18.	0.	5.	1.	3.	1.	26.	0.	8.	1.							
	SOURCE IMAGE DATA	110.	10.	49.	17.	51.	0.	34.	3.	29.	44.	2.	0.	49.	3.	26873.							
64 CCH001AS	CHANGE DATA	0.	31.	0.	1.	0.	0.	0.	3.	0.	0.	0.	10.	0.	5.	0.							
	SOURCE IMAGE DATA	50.	5.	12.	3.	5.	4.	5.	0.	11.	14.	1.	0.	12.	2.	1094.							
65 CCH001AS	CHANGE DATA	0.	80.	0.	8.	0.	13.	0.	4.	12.	3.	5.	20.	40.	8.	14.							
	SOURCE IMAGE DATA	125.	16.	12.	14.	0.	0.	0.	0.	32.	44.	3.	0.	0.	4.	12458.							
66 CCH001AS	CHANGE DATA	3.	100.	2.	13.	1.	15.	0.	7.	2.	3.	1.	25.	72.	14.	2.							
	SOURCE IMAGE DATA	175.	26.	15.	21.	0.	0.	43.	0.	20.	77.	5.	0.	0.	6.	37633.							
67 CCH001AS	CHANGE DATA	3.	90.	2.	7.	1.	19.	0.	6.	10.	3.	6.	28.	0.	10.	2.							
	SOURCE IMAGE DATA	145.	11.	52.	20.	50.	0.	36.	2.	31.	53.	4.	1.	52.	6.	35552.							
68 CCH001AS	CHANGE DATA	0.	50.	0.	3.	0.	7.	0.	5.	0.	0.	0.	15.	0.	9.	0.							
	SOURCE IMAGE DATA	75.	3.	20.	5.	13.	0.	9.	0.	16.	24.	2.	1.	20.	4.	4235.							
69 CCH001AS	CHANGE DATA	3.	72.	1.	7.	2.	12.	0.	5.	11.	3.	6.	20.	52.	10.	19.							
	SOURCE IMAGE DATA	130.	6.	11.	20.	0.	0.	35.	0.	31.	50.	4.	0.	0.	5.	21903.							
70 CCH001AS	CHANGE DATA	2.	121.	2.	11.	0.	16.	0.	8.	1.	3.	7.	27.	0.	11.	1.							
	SOURCE IMAGE DATA	195.	21.	18.	23.	0.	0.	48.	0.	38.	66.	6.	0.	71.	7.	46126.							
71 CCH001AS	CHANGE DATA	2.	75.	1.	10.	1.	13.	0.	3.	1.	3.	1.	14.	0.	5.	1.							
	SOURCE IMAGE DATA	150.	21.	18.	28.	0.	0.	55.	3.	10.	58.	1.	0.	68.	2.	35166.							
72 CCH001AS	CHANGE DATA	0.	78.	0.	9.	0.	13.	0.	3.	0.	0.	0.	19.	0.	6.	0.							
	SOURCE IMAGE DATA	145.	24.	62.	22.	0.	0.	46.	0.	10.	55.	2.	0.	62.	3.	29675.							

RAW DATA

MODULES 73 TO 84

MODULE NAME	CHANGE DATA SOURCE IMAGE DATA	TC NC GN-UR	DC PS N-UR	CC R-TP LE-UR	UC NR-TR GE-UR	KE B-TR AV-UR	D-UR AV-TR	KM D-TR ITE	AO-UR DOW	UT AO-TR DOW	LN-UR WN	PF LN-TR PC
73 CDR001AS	CHANGE DATA	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	SOURCE IMAGE DATA	145.	58.	59.	39.	13.	3.	6.	23.	58.	9.	17.
		7.	17.	0.	0.	0.	49.	4.	0.	0.	5.	27178.
74 CDR001AS	CHANGE DATA	2.	1.	1.	0.	1.	1.	1.	21.	0.	5.	1.
	SOURCE IMAGE DATA	100.	43.	44.	32.	8.	3.	3.	43.	43.	5.	8.
		6.	18.	0.	0.	23.	43.	1.	0.	0.	2.	21831.
75 CDR001AS	CHANGE DATA	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	SOURCE IMAGE DATA	50.	28.	33.	24.	2.	2.	2.	14.	28.	3.	3.
		6.	10.	0.	1.	20.	22.	0.	0.	0.	1.	6441.
76 CDR001AS	CHANGE DATA	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
	SOURCE IMAGE DATA	15.	3.	0.	0.	1.	2.	2.	3.	3.	2.	2.
		0.	0.	0.	0.	3.	3.	0.	0.	0.	1.	23.
77 CLE001PZ	CHANGE DATA	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	SOURCE IMAGE DATA	225.	93.	100.	69.	8.	3.	6.	31.	93.	14.	27.
		10.	16.	0.	2.	3.	44.	4.	1.	1.	7.	87913.
78 CDR001AS	CHANGE DATA	6.	3.	3.	0.	1.	1.	2.	27.	3.	39.	4.
	SOURCE IMAGE DATA	383.	125.	72.	54.	7.	48.	3.	0.	125.	39.	80302.
		19.	26.	0.	0.	0.	78.	149.	0.	0.	19.	0.
79 CDR001AS	CHANGE DATA	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	SOURCE IMAGE DATA	77.	45.	72.	16.	5.	12.	4.	17.	32.	11.	19.
		6.	11.	0.	0.	0.	25.	3.	0.	0.	4.	8441.
80 CDR001P7	CHANGE DATA	2.	2.	0.	0.	0.	0.	2.	0.	0.	0.	0.
	SOURCE IMAGE DATA	105.	33.	31.	18.	6.	7.	8.	24.	33.	10.	17.
		3.	9.	1.	0.	0.	32.	1.	0.	2.	4.	13922.
81 CDR001AS	CHANGE DATA	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	SOURCE IMAGE DATA	25.	11.	9.	8.	1.	1.	2.	6.	11.	3.	3.
		6.	6.	1.	2.	12.	12.	0.	0.	0.	1.	514.
82 CDR001AS	CHANGE DATA	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	SOURCE IMAGE DATA	25.	11.	9.	8.	1.	1.	2.	6.	11.	3.	3.
		6.	6.	1.	2.	12.	12.	0.	0.	0.	1.	514.
83 CDR001AS	CHANGE DATA	2.	1.	1.	0.	0.	0.	2.	27.	0.	33.	0.
	SOURCE IMAGE DATA	317.	116.	70.	63.	7.	26.	3.	116.	116.	33.	77.
		4.	7.	0.	2.	2.	66.	138.	1.	0.	13.	77481.
84 CDR001AS	CHANGE DATA	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	SOURCE IMAGE DATA	13.	6.	5.	5.	1.	1.	1.	5.	7.	2.	2.
		1.	1.	0.	1.	6.	6.	0.	0.	0.	1.	209.

Age Group	2006 (%)	2008 (%)
18-29	~85	~85
30-49	~80	~80
50-69	~75	~75
70+	~65	~65

NADC-79163-50

MODULE NAME		CHANGE DATA SOURCE IMAGE DATA		RAW DATA -----										MODULES					97 TO 109			PAGE		9
				TC GN-UR	NC	NCW GN-TR	DC PS N-UR	R-UR N-TR	CC R-TR LE-UR	NC-UR LE-TR	UC NR-TR GF-UR	B-UR GE-TR	KE B-TR AV-UR	D-UR AV-TR	KM D-TR ITE	AO-UR DOM	UT AO-TR DOU	LN-UR WN	PE LN-TR PC					
97	DAV001SB	CHANGE DATA	1.	190.	118.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	15.	30.	44220.			
	SOURCE IMAGE DATA	10.	14.	65.	7.	15.	64.	17.	1.	42.	6.	0.	33.	4.	60.	11.	27.	65.	6.					
98	DAW001SB	CHANGE DATA	0.	180.	114.	9.	0.	67.	19.	43.	4.	0.	0.	0.	4.	9.	27.	62.	11.	22.	45625.			
	SOURCE IMAGE DATA	7.	9.	62.	6.	16.	1.	0.	1.	0.	0.	25.	48.	5.	0.	5.	0.	0.	6.	0.				
99	DCA001MC	CHANGE DATA	0.	160.	115.	7.	0.	38.	10.	22.	8.	0.	0.	0.	4.	8.	22.	41.	11.	22.	0.			
	SOURCE IMAGE DATA	7.	7.	41.	8.	9.	0.	0.	0.	0.	0.	26.	38.	3.	0.	3.	0.	1.	5.	16707.	0.			
100	DCR001SR	CHANGE DATA	0.	65.	48.	3.	0.	5.	4.	0.	0.	0.	0.	0.	3.	0.	10.	0.	0.	0.	0.			
	SOURCE IMAGE DATA	3.	3.	12.	1.	2.	0.	0.	0.	4.	0.	10.	14.	1.	0.	4.	10.	12.	6.	9.	1004.			
101	DCC001RW	CHANGE DATA	0.	113.	66.	7.	0.	42.	11.	26.	4.	0.	0.	0.	4.	8.	19.	42.	13.	17.	0.			
	SOURCE IMAGE DATA	6.	7.	42.	8.	11.	0.	0.	0.	0.	0.	27.	35.	1.	0.	1.	0.	0.	2.	13979.	0.			
102	DCCC02RW	CHANGE DATA	0.	25.	20.	2.	0.	4.	2.	0.	1.	0.	0.	0.	1.	1.	4.	0.	3.	3.	0.			
	SOURCE IMAGE DATA	2.	2.	5.	1.	1.	0.	0.	0.	3.	0.	6.	6.	0.	0.	0.	0.	5.	1.	123.	0.			
103	DRCCE3RW	CHANGE DATA	0.	27.	19.	4.	0.	6.	4.	0.	0.	0.	0.	0.	1.	1.	7.	8.	3.	0.	0.			
	SOURCE IMAGE DATA	3.	4.	8.	3.	3.	0.	0.	0.	0.	0.	9.	10.	0.	0.	0.	0.	0.	1.	447.	3.			
104	DCCCN0RW	CHANGE DATA	0.	24.	20.	0.	0.	4.	1.	2.	1.	0.	0.	0.	1.	1.	3.	4.	3.	0.	0.			
	SOURCE IMAGE DATA	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	4.	4.	0.	0.	0.	0.	0.	1.	62.	3.			
105	DCCCV1RW	CHANGE DATA	0.	26.	20.	0.	0.	6.	2.	0.	1.	0.	0.	0.	1.	1.	4.	6.	3.	0.	0.			
	SOURCE IMAGE DATA	0.	0.	1.	1.	3.	0.	0.	0.	4.	0.	4.	6.	0.	0.	0.	0.	0.	1.	194.	0.			
106	DCM001NS	CHANGE DATA	0.	70.	41.	2.	0.	6.	4.	0.	2.	0.	0.	0.	3.	18.	9.	24.	5.	0.	0.			
	SOURCE IMAGE DATA	2.	2.	24.	6.	18.	0.	0.	0.	0.	0.	13.	27.	0.	0.	0.	0.	0.	1.	2340.	0.			
107	DCT001NS	CHANGE DATA	0.	75.	50.	7.	0.	14.	6.	10.	3.	0.	0.	0.	4.	5.	13.	0.	5.	8.	0.			
	SOURCE IMAGE DATA	5.	7.	20.	4.	8.	0.	0.	0.	0.	0.	16.	23.	0.	0.	0.	0.	0.	1.	3458.	0.			
108	DCM001NS	CHANGE DATA	0.	100.	69.	0.	0.	0.	8.	0.	4.	0.	0.	0.	3.	7.	15.	0.	12.	0.	0.			
	SOURCE IMAGE DATA	0.	0.	25.	10.	11.	0.	13.	8.	11.	4.	0.	22.	33.	3.	0.	25.	0.	4.	22.	5394.			

MODULF NAME	SOURCE	DATA	RAW DATA										MODULES 109 TO 120										PAGE 10					
			YC GN-UR	NC	DC PS N-UP	HC GN-TR	PC N-UP	DC PS N-UP	R-UR N-TR	R-TR LE-UR	CC LE-UR	CC LE-UR	NR-TR GE-UR	UC GE-UR	R-UP GE-TR	AV-UR GE-TR	B-TR AV-TR	KE AV-TR	D-UP AV-TR	D-TR AV-TR	HW D-TR	HW D-TR	AO-UP DOW	AO-TR DOW	UT DOW	LN-UP DOW	LN-TR PC	OF PC
109	NOCC001SH	CHANGE DATA	1.	250.	1.	143.	1.	11.	0.	117.	0.	0.	6.	0.	15.	4.	0.	0.	0.	0.	0.	0.	32.	100.	0.	17.	1.	36.
	SOURCE	DATA	12.	18.	7.	18.	21.	3.	3.	76.	0.	0.	0.	0.	39.	76.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	115044.	
110	NOFN001RW	CHANGE DATA	1.	120.	1.	76.	1.	6.	0.	41.	0.	0.	5.	0.	7.	4.	0.	18.	0.	0.	0.	0.	0.	40.	0.	12.	1.	25.
	SOURCE	DATA	4.	4.	6.	4.	9.	0.	0.	0.	0.	0.	0.	22.	38.	38.	4.	0.	0.	0.	0.	0.	0.	0.	0.	5.	16691.	
111	NOH001SR	CHANGE DATA	0.	215.	0.	137.	0.	8.	0.	58.	0.	0.	8.	0.	16.	4.	0.	30.	0.	0.	0.	0.	0.	71.	0.	20.	0.	47.
	SOURCE	DATA	10.	12.	9.	12.	15.	0.	0.	0.	0.	0.	0.	39.	74.	74.	8.	0.	0.	0.	0.	0.	0.	0.	0.	10.	53593.	
112	NOH001SR	CHANGE DATA	2.	300.	0.	173.	0.	11.	27.	112.	0.	0.	9.	0.	22.	4.	0.	40.	0.	0.	0.	0.	0.	121.	0.	29.	2.	67.
	SOURCE	DATA	12.	14.	17.	14.	38.	1.	1.	1.	0.	0.	0.	0.	59.	120.	10.	0.	0.	0.	0.	0.	0.	0.	0.	11.	158676.	
113	NOH001SR	CHANGE DATA	1.	145.	1.	91.	1.	11.	0.	54.	0.	0.	4.	0.	9.	4.	0.	26.	0.	0.	0.	0.	0.	51.	0.	10.	1.	18.
	SOURCE	DATA	9.	10.	5.	10.	12.	1.	1.	1.	0.	0.	0.	0.	25.	41.	3.	0.	0.	0.	0.	0.	0.	0.	0.	4.	29622.	
114	NOH001SR	CHANGE DATA	0.	150.	0.	91.	0.	11.	0.	59.	0.	0.	4.	0.	0.	4.	0.	26.	0.	0.	0.	0.	0.	53.	0.	9.	0.	17.
	SOURCE	DATA	7.	9.	5.	9.	13.	0.	0.	0.	0.	0.	0.	21.	39.	39.	3.	0.	0.	0.	0.	0.	0.	0.	0.	4.	35216.	
115	NOH001SR	CHANGE DATA	0.	370.	0.	229.	0.	14.	0.	135.	0.	0.	10.	0.	22.	4.	0.	41.	0.	0.	0.	0.	0.	127.	0.	29.	0.	65.
	SOURCE	DATA	6.	12.	12.	12.	35.	4.	4.	4.	0.	0.	0.	0.	51.	116.	9.	0.	0.	0.	0.	0.	0.	1.	11.	29.	201320.	
116	DFAN001RW	CHANGE DATA	0.	120.	0.	71.	0.	7.	0.	43.	0.	0.	4.	0.	9.	4.	0.	25.	0.	0.	0.	0.	0.	44.	0.	7.	0.	12.
	SOURCE	DATA	6.	6.	6.	6.	16.	1.	1.	1.	0.	1.	1.	1.	21.	37.	2.	0.	0.	0.	0.	0.	0.	0.	0.	3.	25367.	
117	DFC001RW	CHANGE DATA	0.	105.	0.	76.	0.	4.	0.	21.	0.	0.	4.	0.	0.	3.	0.	13.	0.	0.	0.	0.	0.	22.	0.	9.	0.	16.
	SOURCE	DATA	4.	4.	1.	4.	3.	0.	0.	0.	0.	0.	0.	14.	23.	23.	2.	0.	0.	0.	0.	0.	0.	0.	0.	3.	5195.	
118	DFE001RW	CHANGE DATA	0.	295.	0.	215.	0.	12.	0.	70.	0.	0.	7.	0.	16.	4.	0.	28.	0.	0.	0.	0.	0.	75.	0.	22.	0.	49.
	SOURCE	DATA	4.	4.	10.	4.	24.	0.	0.	0.	0.	0.	0.	36.	77.	77.	8.	0.	0.	0.	0.	0.	0.	1.	10.	22.	59469.	
119	DFM001RW	CHANGE DATA	0.	80.	0.	52.	0.	4.	0.	18.	0.	0.	3.	0.	6.	4.	0.	17.	0.	0.	0.	0.	0.	23.	0.	6.	0.	9.
	SOURCE	DATA	4.	4.	3.	4.	9.	0.	0.	0.	0.	0.	0.	13.	22.	22.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	6410.	
120	DFP001RW	CHANGE DATA	0.	160.	0.	116.	0.	9.	0.	36.	0.	0.	5.	0.	8.	4.	0.	20.	0.	0.	0.	0.	0.	0.	0.	13.	0.	27.
	SOURCE	DATA	2.	2.	10.	2.	16.	0.	0.	0.	0.	0.	0.	25.	45.	45.	3.	0.	0.	0.	0.	0.	0.	1.	5.	16726.		

MODULF NAME		CHANGE DATA		RAW DATA										MODULES 121 TO 132										PAGE 11						
				SOURCE IMAGE DATA		SOURCE IMAGE DATA		SOURCE IMAGE DATA		SOURCE IMAGE DATA		SOURCE IMAGE DATA		SOURCE IMAGE DATA		SOURCE IMAGE DATA		SOURCE IMAGE DATA		SOURCE IMAGE DATA										
TC	NC	GN-UR	DC	PS	N-UP	R-UR	N-TR	R-TR	CC	NR-UR	LE-TR	NR-TR	GE-UR	GE-TR	B-UR	AV-UR	D-UR	AV-TR	KE	D-TR	ITE	AD-UR	DOM	AD-TR	DOU	LN-UR	MN	LN-TR	PC	
121	DFS001NS	CHANGE DATA	210.	153.	2.	3.	48.	7.	12.	0.	45.	13.	0.	1.	7.	9.	4.	11.	24.	0.	0.	0.	0.	0.	0.	0.	14.	8.	3.	28308.
122	DGR001SR	CHANGE DATA	75.	56.	6.	0.	15.	4.	3.	0.	13.	7.	0.	0.	2.	11.	2.	0.	11.	0.	0.	0.	11.	0.	0.	0.	4.	1.	0.	2199.
123	DMR001NS	CHANGE DATA	0.	48.	2.	0.	12.	2.	3.	0.	0.	2.	0.	0.	2.	11.	2.	8.	6.	0.	0.	0.	6.	0.	0.	0.	8.	1.	0.	529.
124	DMBAHJNS	CHANGE DATA	124.	86.	6.	0.	38.	5.	6.	0.	17.	6.	0.	0.	6.	11.	2.	18.	14.	0.	0.	0.	14.	0.	0.	0.	12.	5.	0.	7927.
125	DMBCM3NS	CHANGE DATA	50.	34.	3.	0.	14.	5.	5.	0.	10.	8.	0.	0.	2.	13.	2.	2.	12.	0.	0.	2.	12.	0.	0.	0.	5.	1.	0.	1701.
126	DMRRH2NS	CHANGE DATA	0.	48.	3.	0.	10.	3.	4.	0.	7.	5.	0.	0.	2.	3.	1.	1.	8.	0.	0.	0.	8.	0.	0.	0.	4.	1.	0.	745.
127	DIA001NS	CHANGE DATA	535.	359.	13.	0.	168.	10.	58.	0.	163.	22.	0.	0.	10.	33.	4.	25.	36.	0.	0.	0.	36.	0.	0.	0.	32.	20.	0.	250906.
128	DTH001NS	CHANGE DATA	315.	221.	8.	0.	89.	8.	32.	0.	60.	22.	0.	55.	19.	42.	4.	15.	36.	0.	0.	0.	36.	0.	0.	0.	18.	13.	0.	103856.
129	DTM001NS	CHANGE DATA	0.	226.	9.	0.	93.	9.	37.	0.	80.	23.	0.	58.	8.	20.	4.	15.	35.	0.	0.	0.	35.	0.	0.	0.	21.	13.	0.	99640.
130	DMA001NS	CHANGE DATA	3.	78.	6.	1.	44.	8.	15.	2.	31.	11.	0.	24.	6.	9.	4.	11.	21.	0.	0.	0.	21.	0.	0.	3.	14.	7.	0.	16431.
131	DMR001NS	CHANGE DATA	0.	50.	3.	0.	10.	2.	1.	0.	0.	2.	0.	0.	2.	11.	2.	0.	6.	0.	0.	6.	0.	0.	0.	0.	7.	1.	0.	368.
132	DMRAWJNS	CHANGE DATA	0.	62.	3.	0.	11.	2.	3.	0.	0.	2.	0.	0.	4.	6.	2.	3.	8.	0.	0.	0.	8.	0.	0.	0.	4.	3.	0.	726.

[illegible]

RAW DATA										MODULES 145 TO 156										PAGE 12	

MODULE NAME	CHANGE DATA	TC	NCM	DC	R-UR	CC	NR-UR	UC	R-UR	KE	D-UR	AV-UR	AV-UR	AV-UR	AV-UR	AV-UR	AV-UR	AV-UR	AV-UR	AV-UR	AV-UR
SOURCE NAME	SOURCE IMAGE DATA	GN-UR	GN-TR	N-UR	N-TR	LE-UR	LE-TR	GE-UR	GE-TR	AV-UR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR	AV-TR
145 DST001NS	CHANGE DATA	0.	80.	3.	7.	17.	8.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		116.	3.	5.	7.	1.	1.	1.	0.	25.	34.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
146 DST001NS	CHANGE DATA	0.	31.	0.	2.	8.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		41.	0.	4.	6.	1.	1.	0.	0.	11.	14.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
147 DST001NS	CHANGE DATA	0.	34.	0.	2.	11.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		47.	0.	4.	7.	1.	1.	0.	0.	12.	17.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
148 DST001NS	CHANGE DATA	0.	46.	0.	2.	17.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		67.	0.	5.	11.	1.	1.	0.	0.	16.	28.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
149 DST001NS	CHANGE DATA	0.	46.	0.	2.	17.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		67.	0.	5.	11.	1.	1.	0.	0.	16.	28.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
150 DST001NS	CHANGE DATA	0.	85.	0.	3.	17.	9.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		117.	0.	8.	13.	0.	0.	0.	0.	22.	42.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.
151 DST001NS	CHANGE DATA	3.	340.	3.	14.	120.	17.	0.	0.	2.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		520.	25.	31.	62.	0.	0.	0.	0.	102.	212.	20.	0.	0.	0.	0.	0.	0.	0.	0.	0.
152 DST001NS	CHANGE DATA	0.	346.	0.	14.	189.	28.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		560.	22.	15.	58.	1.	3.	0.	0.	32.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
153 DST001NS	CHANGE DATA	0.	142.	0.	8.	60.	14.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		210.	1.	7.	22.	4.	6.	0.	0.	32.	68.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.
154 DST001NS	CHANGE DATA	1.	82.	1.	5.	11.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		110.	9.	6.	6.	0.	0.	0.	0.	22.	27.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155 DST001NS	CHANGE DATA	0.	73.	0.	4.	8.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		98.	3.	5.	5.	0.	0.	0.	0.	20.	26.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
156 DST001NS	CHANGE DATA	0.	43.	0.	2.	5.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA		52.	4.	3.	3.	0.	0.	0.	0.	11.	12.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

1. <https://doi.org/10.1016/j.jmb.2019.04.009>

MODULE NAME		CHANGE DATA SOURCE IMAGE DATA		RAW DATA -----										MODULES 169 TO 180										PAGE 15	
				TC NC GN-UR	DC PS N-UR	R-UR N-TR	CC R-TR LE-UR	NR-UR LE-TR	UC GE-UR	B-UR GE-TR	KE B-TR AV-UR	D-UR AV-TR	KM O-TR ITE	AO-UR DOU	UT AO-TR OQU	LN-UR MN	PE L-TR PC								
169	DZX001CS	2. 530. 17.	2. 171. 10.	13. 49.	0. 161. 1.	19. 2.	0. 99. 1.	10. 2.	1. 51. 62.	4. 161.	0. 33. 0.	1. 171. 5.	33. 23.	2. 80. 235909.											
170	DZ7001CS	1. 415. 14.	0. 105. 8.	11. 26.	1. 94. 1.	15. 1.	0. 57. 1.	9. 1.	1. 33. 46.	4. 98.	0. 28. 0.	0. 105. 5.	22. 16.	1. 49. 89769.											
171	FCA001SR	1. 275. 16.	0. 127. 10.	11. 27.	1. 154. 0.	21. 0.	0. 95. 1.	8. 2.	0. 17. 45.	4. 98.	0. 33. 0.	1. 127. 0.	18. 8.	1. 42. 182232.											
172	FCR001SB	2. 70. 6.	1. 21. 5.	4. 6.	0. 16. 0.	8. 0.	1. 10. 0.	4. 0.	0. 5. 18.	4. 24.	0. 16. 0.	2. 21. 0.	7. 2.	2. 12. 4846.											
173	FCC001SB	1. 90. 9.	1. 24. 4.	7. 5.	0. 18. 0.	0. 0.	0. 2.	5. 2.	0. 9. 21.	3. 25.	0. 14. 0.	1. 24. 0.	6. 3.	1. 9. 3884.											
174	FCD001SR	1. 165. 12.	0. 77. 7.	9. 14.	1. 103. 0.	18. 0.	0. 0.	6. 0.	0. 8. 30.	4. 51.	0. 28. 0.	1. 77. 0.	11. 4.	1. 21. 77465.											
175	FCG001SB	2. 50. 5.	1. 13. 3.	4. 4.	0. 10. 0.	4. 0.	1. 7. 0.	2. 0.	0. 2. 11.	3. 14.	0. 9. 0.	2. 13. 0.	3. 1.	2. 5. 1221.											
176	FCP001SB	1. 70. 6.	1. 16. 1.	4. 4.	0. 8. 0.	5. 0.	0. 0.	3. 0.	0. 6. 13.	3. 19.	0. 11. 0.	1. 16. 0.	6. 2.	1. 9. 1806.											
177	FCR001SR	2. 300. 17.	2. 107. 16.	14. 27.	0. 88. 0.	16. 0.	0. 56. 2.	11. 2.	0. 30. 64.	3. 118.	0. 30. 10.	2. 107. 0.	29. 11.	2. 66. 83758.											
178	FCS001SR	1. 245. 19.	1. 86. 16.	9. 28.	8. 68. 0.	17. 0.	0. 47. 0.	9. 0.	0. 24. 56.	3. 97.	0. 29. 0.	1. 86. 0.	21. 8.	1. 46. 60546.											
179	FCT001SB	0. 120. 9.	0. 43. 10.	7. 18.	0. 43. 0.	12. 0.	0. 29. 0.	5. 0.	0. 7. 27.	4. 46.	0. 21. 0.	0. 43. 0.	8. 3.	0. 14. 20975.											
180	FCU001SB	2. 370. 14.	2. 137. 14.	11. 24.	0. 113. 1.	19. 1.	0. 5. 1.	10. 11.	1. 46. 73.	4. 155.	0. 33. 0.	1. 137. 0.	39. 18.	2. 95. 146479.											

MODULE NAME	CHANGE DATA SOURCE IMAGE DATA	RAW DATA -----										MODULES 181 TO 192										PAGE 14	
		TC NC GN-UR	NCM GN-TR	DC PS N-UR	R-UR N-TR	CC R-TR LE-UP	NR-UR LE-TR	UC NR-TP GE-UP	H-UR GE-TP	KE R-TR AV-UR	D-UR AV-TR	KW D-TP ITE	AO-UR DOU	UT DOU	LN-UR MN	LN-TR PC							
181 FCUHL1SR	CHANGE DATA SOURCE IMAGE DATA	0. 92. 2.	57. 4.	0. 35. 4.	7. 8.	0. 35. 0.	13. 0.	0. 21. 0.	5. 0.	0. 17.	2. 36.	0. 5. 3.	20. 0.	35. 0.	6. 35.	11. 4.	0. 24. 17120.						
182 FCUMS1SR	CHANGE DATA SOURCE IMAGE DATA	0. 193. 9.	119. 14.	0. 73. 6.	9. 15.	0. 60. 0.	15. 0.	0. 35. 2.	7. 3.	0. 36.	2. 78.	0. 14. 8.	24. 0.	73. 0.	0. 0.	19. 9.	0. 46. 47431.						
183 FCUPS1SR	CHANGE DATA SOURCE IMAGE DATA	0. 185. 6.	122. 12.	0. 63. 5.	10. 7.	0. 56. 1.	8. 1.	0. 28. 5.	7. 12.	0. 34.	2. 71.	0. 10. 7.	17. 0.	63. 0.	0. 0.	17. 8.	0. 39. 27646.						
184 FDR001PR	CHANGE DATA SOURCE IMAGE DATA	2. 290. 7.	197. 9.	1. 88. 12.	14. 33.	1. 73. 0.	19. 0.	0. 50. 0.	8. 0.	1. 22. 47.	3. 95.	0. 16. 12.	30. 0.	88. 1.	1. 1.	23. 14.	2. 53. 74011.						
185 FDS001PR	CHANGE DATA SOURCE IMAGE DATA	2. 280. 14.	169. 20.	2. 105. 14.	13. 35.	0. 95. 0.	16. 0.	0. 63. 0.	7. 0.	1. 25. 54.	3. 110.	0. 17. 8.	26. 0.	105. 2.	1. 25.	26. 11.	55. 80632.						
186 FDT001PR	CHANGE DATA SOURCE IMAGE DATA	0. 95. 6.	53. 9.	0. 37. 9.	9. 16.	0. 31. 0.	9. 0.	0. 23. 0.	4. 0.	0. 24.	3. 40.	0. 7. 2.	16. 0.	37. 0.	0. 0.	9. 3.	0. 15. 10437.						
187 FPA001CS	CHANGE DATA SOURCE IMAGE DATA	4. 145. 7.	90. 7.	2. 49. 14.	13. 18.	2. 45. 1.	17. 1.	0. 28. 1.	5. 1.	2. 37.	4. 51.	1. 13. 2.	26. 0.	49. 1.	1. 1.	14. 4.	3. 24. 22612.						
188 FPC001CS	CHANGE DATA SOURCE IMAGE DATA	1. 85. 9.	61. 9.	1. 20. 4.	9. 4.	0. 15. 0.	5. 0.	0. 9. 0.	4. 0.	0. 18.	3. 19.	0. 3. 1.	12. 0.	20. 0.	1. 0.	5. 2.	1. 6. 2156.						
189 FPD001CS	CHANGE DATA SOURCE IMAGE DATA	1. 75. 2.	51. 2.	1. 20. 5.	7. 7.	0. 18. 1.	10. 1.	0. 12. 0.	3. 0.	0. 14.	4. 19.	0. 5. 1.	17. 0.	20. 0.	1. 0.	6. 2.	1. 9. 4480.						
190 FPL001CS	CHANGE DATA SOURCE IMAGE DATA	3. 280. 7.	180. 8.	1. 95. 15.	13. 28.	2. 95. 1.	24. 1.	0. 58. 1.	9. 1.	2. 43.	5. 91.	1. 20. 8.	38. 0.	95. 0.	0. 0.	24. 9.	53. 107823.						
191 FPM001CS	CHANGE DATA SOURCE IMAGE DATA	0. 175. 6.	129. 7.	0. 48. 4.	10. 10.	0. 35. 0.	8. 0.	0. 20. 0.	9. 0.	0. 25.	3. 50.	0. 10. 8.	20. 0.	48. 0.	0. 0.	15. 9.	0. 33. 18674.						
192 FPN001CS	CHANGE DATA SOURCE IMAGE DATA	2. 230. 7.	153. 8.	2. 73. 9.	12. 22.	0. 59. 1.	12. 1.	0. 37. 1.	10. 1.	2. 41.	4. 84.	0. 16. 8.	26. 0.	73. 1.	0. 1.	23. 10.	2. 52. 47759.						

PAW DATA

MODULES 193 TO 204

MODULE NAME	CHANGE DATA		SOURCE IMAGE DATA		TC GN-UR	NCM GN-TR	DC PS N-UR	R-UR N-TR	CC		UC NR-TR GE-UR	R-UR GE-TR	KE		D-UR AV-TR	D-TR ITE	KM DOW	AO-UR DOW	AO-TR DOU	UT LN-UR MN	PE LN-TR PC	
	CHANGE DATA	SOURCE IMAGE DATA	R-TR LE-UR	NR-TR LE-TR					B-TR AV-UR	8-TR AV-UR												
193 FPP001CS	1.	50.	1.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
SOURCE IMAGE DATA	4.	4.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.
194 FPR001MC	2.	60.	1.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.
SOURCE IMAGE DATA	2.	2.	4.	5.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.
195 FPS001CS	1.	195.	1.	13.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
SOURCE IMAGE DATA	17.	22.	11.	18.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	27.
196 FPT001CS	0.	95.	0.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA	5.	8.	10.	15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.
197 FPU001CS	1.	160.	1.	11.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
SOURCE IMAGE DATA	9.	9.	48.	11.	43.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	27.
198 FPV001MC	1.	75.	1.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
SOURCE IMAGE DATA	3.	3.	20.	6.	17.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	12.
199 FPX001MC	0.	215.	0.	11.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA	2.	3.	15.	27.	67.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	5031.
200 FPZ001CS	0.	65.	0.	8.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA	3.	3.	15.	3.	11.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
201 FRN001PZ	6.	130.	5.	62.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	5.
SOURCE IMAGE DATA	8.	8.	15.	25.	71.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	13.
202 FRC001PZ	4.	210.	3.	14.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	4.
SOURCE IMAGE DATA	17.	22.	8.	9.	71.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	27.
203 FRD001PZ	5.	175.	5.	13.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.
SOURCE IMAGE DATA	9.	9.	12.	25.	73.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	28.
204 FRP001PZ	0.	35.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOURCE IMAGE DATA	2.	2.	5.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.

MODULE NAME		CHANGE DATA SOURCE IMAGE DATA		RAW DATA -----										MODULES 205 TO 216										PAGE 14	
				TC GN-UR	NCM GN-TR	DC PS N-UP	R-UR N-TR	CC R-TR LE-UR	NR-UR LE-TR	UC NR-TR GE-UR	R-UP GE-TR	KE R-TR AV-UR	D-UP AV-TR	KM D-TR ITF	AO-UP DOW	UT DOW	LN-UP MN	PE LN-TR PC							
205	FRS001PZ	CHANGE DATA SOURCE IMAGE DATA	1. 170. 15.	102. 17. 1.	63. 12. 19.	10. 19. 0.	0. 58. 0.	12. 0. 0.	0. 37. 2.	7. 2. 2.	0. 17. 44.	3. 67. 4.	0. 9. 4.	22. 0. 0.	1. 63. 0.	15. 5. 29009.	1. 29. 29009.								
206	FRT001P7	CHANGE DATA SOURCE IMAGE DATA	3. 130. 8.	76. 12. 1.	47. 12. 22.	7. 22. 0.	1. 46. 0.	15. 0. 0.	0. 32. 0.	5. 0. 0.	2. 8. 28.	4. 48. 7.	1. 2. 7.	24. 0. 0.	0. 47. 0.	8. 3. 26732.	2. 14. 26732.								
207	FRU001PZ	CHANGE DATA SOURCE IMAGE DATA	6. 500. 16.	325. 26. 1.	169. 18. 1.	14. 51. 0.	2. 159. 0.	29. 0. 0.	102. 0. 0.	12. 0. 0.	5. 41. 68.	4. 163. 19.	1. 26. 1.	45. 0. 0.	0. 169. 0.	34. 20. 303181.	5. 46. 303181.								
208	FUT001TR	CHANGE DATA SOURCE IMAGE DATA	1. 576. 4.	387. 5. 1.	182. 30. 1.	14. 80. 10.	0. 120. 10.	26. 12. 0.	87. 0. 0.	12. 0. 0.	0. 35. 92.	4. 214. 18.	1. 60. 1.	42. 1. 1.	0. 182. 2.	48. 22. 22.	0. 117. 246157.								
209	FUT001TR	CHANGE DATA SOURCE IMAGE DATA	1. 114. 0.	89. 0. 0.	25. 5. 10.	6. 10. 3.	0. 9. 3.	8. 3. 3.	15. 0. 0.	3. 0. 0.	0. 5. 20.	2. 32. 2.	0. 5. 2.	13. 0. 0.	1. 25. 2.	12. 5. 5122.	1. 19. 5122.								
210	FVA001MC	CHANGE DATA SOURCE IMAGE DATA	2. 375. 11.	233. 13. 1.	139. 20. 1.	12. 36. 0.	1. 149. 4.	25. 4. 0.	87. 0. 0.	11. 0. 0.	0. 25. 69.	4. 135. 8.	0. 27. 0.	40. 0. 0.	2. 139. 3.	34. 12. 205229.	2. 82. 205229.								
211	FVC001MC	CHANGE DATA SOURCE IMAGE DATA	1. 130. 11.	87. 11. 1.	39. 5. 1.	12. 8. 5.	0. 40. 0.	9. 0. 0.	24. 5. 5.	5. 5. 5.	0. 10. 28.	3. 36. 3.	0. 5. 3.	17. 0. 0.	1. 39. 0.	7. 4. 10833.	1. 12. 10833.								
212	FVD001MC	CHANGE DATA SOURCE IMAGE DATA	1. 80. 4.	50. 4. 1.	24. 7. 7.	7. 8. 0.	0. 21. 2.	8. 2. 0.	14. 0. 0.	4. 0. 0.	0. 4. 22.	28. 0. 1.	0. 6. 1.	16. 0. 0.	1. 24. 0.	9. 2. 5419.	1. 14. 5419.								
213	FVP001MC	CHANGE DATA SOURCE IMAGE DATA	1. 55. 3.	38. 3. 1.	10. 2. 2.	3. 2. 0.	0. 5. 0.	3. 0. 0.	3. 0. 0.	2. 0. 0.	0. 4. 9.	3. 11. 0.	0. 3. 0.	8. 0. 0.	1. 10. 0.	4. 1. 661.	1. 6. 661.								
214	FVS001MC	CHANGE DATA SOURCE IMAGE DATA	1. 190. 16.	119. 18. 0.	64. 12. 0.	9. 19. 0.	0. 58. 0.	12. 0. 0.	37. 2. 0.	7. 2. 2.	0. 18. 45.	3. 68. 4.	0. 9. 0.	22. 0. 0.	1. 64. 0.	15. 5. 30469.	1. 29. 30469.								
215	FVT001MC	CHANGE DATA SOURCE IMAGE DATA	0. 100. 5.	63. 8. 0.	31. 9. 1.	7. 14. 0.	0. 31. 0.	12. 0. 0.	21. 0. 0.	4. 0. 0.	0. 5. 21.	4. 33. 1.	0. 5. 1.	20. 0. 0.	0. 31. 0.	7. 2. 12127.	0. 11. 12127.								
216	FVU001MC	CHANGE DATA SOURCE IMAGE DATA	4. 520. 14.	346. 26. 1.	169. 14. 1.	12. 39. 0.	0. 162. 0.	27. 0. 0.	96. 0. 0.	12. 0. 0.	3. 47. 68.	4. 162. 20.	0. 26. 0.	43. 0. 0.	1. 169. 0.	40. 21. 298028.	4. 97. 298028.								

31

MODULE NAME	CHANGE DATA SOURCE IMAGE DATA	RAW DATA -----										MODULES 217 TO 228										PAGE 10	
		TC GN-UR	NCM GN-TR	DC PS N-UP	R-UR N-TR	CC R-TR LE-UP	NR-UR LE-TR	UC GE-UR	R-UR GE-TR	KE B-TR AV-UR	D-UR AV-TR	KM D-TR ITE	AO-UP DOM	UT AO-TR DOU	LN-UR MN	PE LN-TR PC							
217 HAR001R	CHANGE DATA SOURCE IMAGE DATA	7. 95. 4.	61. 5.	1. 29. 11.	8. 11.	6. 30. 0.	17. 0.	0. 0.	3. 0.	6. 4. 21.	3. 25.	1. 4. 2.	23. 0.	0. 29. 0.	6. 3.	6. 9. 1044.							
218 HFF001R	CHANGE DATA SOURCE IMAGE DATA	0. 75. 4.	46. 4.	0. 24. 9.	7. 9.	0. 20. 0.	8. 0.	0. 0.	5. 0.	0. 21.	3. 25.	0. 5. 1.	16. 0.	0. 24. 0.	8. 2.	0. 12. 4843.							
219 HFI001R	CHANGE DATA SOURCE IMAGE DATA	2. 45. 3.	34. 3.	2. 13. 6.	7. 6.	0. 12. 0.	6. 0.	0. 0.	2. 0.	1. 3. 12.	2. 12.	1. 2. 0.	10. 0.	0. 13. 0.	3. 1.	1. 3. 1135.							
220 HFR001R	CHANGE DATA SOURCE IMAGE DATA	1. 90. 3.	67. 4.	0. 20. 8.	5. 9.	1. 18. 0.	10. 0.	0. 0.	3. 0.	0. 17.	3. 22.	1. 4. 2.	16. 0.	0. 20. 0.	6. 3.	0. 9. 4580.							
221 HFO001R	CHANGE DATA SOURCE IMAGE DATA	1. 80. 5.	56. 5.	1. 21. 6.	7. 6.	0. 15. 0.	5. 0.	0. 0.	5. 0.	1. 8. 17.	3. 20.	0. 4. 1.	13. 0.	0. 21. 0.	6. 2.	1. 9. 2765.							
222 HLG001R	CHANGE DATA SOURCE IMAGE DATA	1. 50. 3.	32. 3.	0. 11. 3.	7. 4.	1. 0. 0.	4. 0.	0. 0.	3. 0.	1. 3. 9.	2. 10.	0. 2. 0.	9. 0.	0. 11. 0.	3. 1.	1. 3. 744.							
223 HMC001R	CHANGE DATA SOURCE IMAGE DATA	1. 55. 3.	38. 3.	1. 13. 4.	5. 5.	0. 6. 0.	5. 0.	0. 0.	3. 0.	1. 5. 12.	3. 14.	0. 3. 1.	11. 0.	0. 13. 0.	5. 2.	1. 6. 1027.							
224 MOD001R	CHANGE DATA SOURCE IMAGE DATA	1. 50. 3.	32. 3.	1. 15. 7.	6. 8.	0. 13. 0.	8. 0.	0. 0.	3. 0.	0. 13.	2. 14.	1. 2. 0.	13. 0.	0. 15. 0.	3. 1.	0. 3. 1940.							
225 MOJ001R	CHANGE DATA SOURCE IMAGE DATA	3. 325. 5.	186. 15.	1. 133. 30.	13. 53.	2. 121. 3.	23. 3.	0. 1.	10. 1.	3. 69.	3. 131.	0. 27. 9.	36. 0.	0. 133. 1.	30. 11.	3. 59. 146580.							
226 MSC001R	CHANGE DATA SOURCE IMAGE DATA	5. 355. 8.	241. 14.	3. 111. 17.	13. 44.	2. 89. 0.	20. 0.	0. 1.	9. 2.	4. 50.	3. 119.	1. 20. 12.	32. 0.	0. 111. 1.	24. 14.	4. 59. 110711.							
227 MSR001R	CHANGE DATA SOURCE IMAGE DATA	2. 255. 9.	156. 17.	2. 93. 17.	10. 25.	0. 62. 0.	20. 0.	0. 1.	7. 1.	0. 54.	3. 108.	2. 23. 9.	30. 0.	0. 93. 0.	27. 10.	0. 65. 68685.							
228 MUC001R	CHANGE DATA SOURCE IMAGE DATA	2. 305. 10.	196. 19.	1. 104. 13.	13. 36.	1. 88. 0.	18. 0.	0. 1.	10. 2.	1. 47.	3. 112.	1. 21. 8.	31. 0.	0. 104. 1.	23. 10.	1. 55. 102216.							

[illegible]

RAW DATA

MODULES 241 70 252

MODULE NAME	CHANGE DATA SOURCE IMAGE DATA	IC NC GN-UR	NCM GN-TR	DC PS N-UR	R-UR N-TR	CC R-TR LE-UR	CC R-TR LE-UR	UC NB-TP GE-UR	UC NB-TP GE-UR	R-UR GE-TR	B-TR AV-UR	KE B-TR AV-UR	D-UR O-TR	AV-TR ITE	KM D-TR O-TR	AD-UR DOU	AD-TR DOU	LN-UR MN	PE LN-TR DC
241 KLS001MC	CHANGE DATA SOURCE IMAGE DATA	0. 195. 5.	139. 9.	0. 51. 7.	7. 19.	0. 45. 0.	16. 0.	0. 33. 0.	0. 33. 0.	6. 0.	10. 25.	0. 0.	4. 55.	0. 0.	0. 8.	26. 0.	0. 51.	13. 6.	0. 27. 35935.
242 KOR001MC	CHANGE DATA SOURCE IMAGE DATA	0. 60. 3.	40. 3.	0. 16. 6.	7. 7.	0. 15. 0.	8. 0.	10. 0.	0. 0.	3. 0.	3. 13.	0. 0.	3. 15.	0. 0.	0. 3.	14. 0.	0. 0.	4. 1.	0. 5. 2457.
243 KPO001MC	CHANGE DATA SOURCE IMAGE DATA	0. 245. 2.	179. 4.	0. 60. 7.	6. 22.	0. 52. 0.	14. 0.	36. 0.	0. 0.	7. 0.	11. 25.	0. 0.	4. 65.	0. 0.	13. 5.	25. 1.	60. 2.	16. 9.	0. 39. 48494.
244 KPP001MC	CHANGE DATA SOURCE IMAGE DATA	0. 50. 2.	33. 3.	0. 11. 3.	1. 4.	0. 9. 1.	6. 1.	8. 0.	0. 0.	1. 0.	1. 10.	0. 0.	2. 12.	0. 0.	0. 2.	9. 0.	11. 0.	4. 1.	0. 4. 1188.
245 KPR001MC	CHANGE DATA SOURCE IMAGE DATA	3. 130. 6.	88. 6.	2. 38. 10.	8. 14.	1. 26. 0.	11. 0.	19. 0.	0. 0.	6. 0.	9. 29.	2. 0.	3. 45.	0. 0.	10. 4.	20. 0.	38. 0.	13. 5.	3. 25. 12200.
246 KPU001MC	CHANGE DATA SOURCE IMAGE DATA	0. 290. 7.	203. 32.	0. 83. 6.	4. 18.	0. 50. 0.	14. 0.	50. 0.	0. 0.	5. 0.	22. 34.	0. 0.	4. 96.	0. 0.	11. 8.	23. 0.	83. 0.	21. 9.	0. 46. 60008.
247 KRC001MC	CHANGE DATA SOURCE IMAGE DATA	1. 60. 0.	36. 0.	0. 17. 8.	3. 10.	1. 0.	11. 0.	13. 0.	0. 0.	1. 0.	1. 12.	0. 0.	3. 16.	1. 0.	3. 0.	15. 0.	17. 0.	4. 1.	0. 6. 4254.
248 KSD001MC	CHANGE DATA SOURCE IMAGE DATA	4. 260. 10.	183. 11.	3. 73. 14.	12. 25.	1. 52. 0.	13. 0.	36. 0.	0. 0.	10. 0.	22. 46.	0. 0.	3. 84.	0. 0.	15. 8.	26. 0.	73. 1.	22. 10.	4. 48. 40725.
249 KSL001MC	CHANGE DATA SOURCE IMAGE DATA	0. 70. 3.	48. 4.	0. 16. 5.	5. 7.	0. 11. 0.	4. 0.	9. 0.	0. 0.	3. 0.	4. 13.	0. 0.	3. 17.	0. 0.	3. 0.	10. 0.	16. 1.	5. 2.	0. 6. 1645.
250 KSP001MC	CHANGE DATA SOURCE IMAGE DATA	2. 180. 10.	119. 13.	1. 56. 7.	10. 13.	1. 49. 0.	10. 0.	29. 0.	0. 0.	7. 0.	18. 32.	0. 0.	3. 55.	0. 0.	9. 4.	20. 0.	56. 0.	15. 5.	2. 29. 23590.
251 KSR001MC	CHANGE DATA SOURCE IMAGE DATA	4. 485. 18.	295. 31.	3. 185. 23.	14. 77.	1. 176. 7.	28. 8.	134. 0.	0. 0.	11. 0.	28. 82.	3. 0.	4. 193.	0. 0.	23. 9.	43. 1.	185. 3.	34. 14.	4. 77. 325926.
252 KSD001MC	CHANGE DATA SOURCE IMAGE DATA	0. 115. 2.	63. 5.	0. 28. 5.	3. 10.	0. 17. 0.	8. 0.	15. 0.	0. 0.	4. 0.	7. 18.	0. 0.	4. 36.	0. 0.	6. 3.	16. 0.	28. 0.	11. 4.	0. 21. 8520.

RAW DATA

MODULES 253 TO 264

MODULE NAME	CHANGE DATA	TC	NCM	NC	R-UR	CC	UC	KE	D-UR	0-TP	40-UR	UT	LN-TP	PC
	SOURCE	GN-UR	GN-TR	N-UR	N-TR	LE-UR	NR-TP	AV-UR	AV-TR	ITE	NOV	DOU	4N	PC
253 MAC001PR	CHANGE DATA	1.	146.	74.	10.	0.	0.	0.	3.	12.	21.	0.	14.	0.
	SOURCE IMAGE DATA	225.	17.	8.	25.	58.	13.	17.	75.	6.	0.	74.	9.	33.
254 MAR001AK	CHANGE DATA	0.	58.	21.	5.	0.	0.	0.	4.	11.	12.	0.	8.	0.
	SOURCE IMAGE DATA	8.	10.	2.	4.	7.	1.	5.	26.	1.	0.	21.	2.	11.
255 MPE001PR	CHANGE DATA	2.	130.	47.	9.	0.	0.	1.	3.	9.	21.	0.	12.	1.
	SOURCE IMAGE DATA	185.	5.	12.	18.	44.	14.	9.	46.	3.	0.	47.	4.	23.
256 MCA001PR	CHANGE DATA	0.	21.	5.	1.	0.	0.	0.	3.	0.	5.	0.	4.	0.
	SOURCE IMAGE DATA	0.	0.	2.	2.	1.	1.	1.	7.	0.	0.	5.	1.	13.
257 MCC001RW	CHANGE DATA	0.	68.	24.	4.	0.	0.	0.	4.	7.	17.	0.	9.	0.
	SOURCE IMAGE DATA	0.	0.	2.	8.	17.	9.	5.	27.	3.	0.	24.	4.	17.
258 MCR001RW	CHANGE DATA	2.	61.	20.	6.	0.	0.	1.	3.	1.	12.	0.	10.	1.
	SOURCE IMAGE DATA	3.	4.	6.	6.	10.	5.	5.	27.	2.	0.	20.	4.	2637.
259 MCH001PR	CHANGE DATA	1.	71.	22.	7.	0.	0.	1.	3.	0.	13.	0.	7.	1.
	SOURCE IMAGE DATA	3.	3.	8.	9.	20.	8.	3.	23.	0.	0.	22.	1.	11.
260 MCI001RW	CHANGE DATA	2.	68.	39.	8.	0.	0.	0.	4.	11.	26.	0.	10.	0.
	SOURCE IMAGE DATA	110.	9.	6.	15.	34.	17.	5.	41.	1.	0.	39.	3.	16.
261 MCM001PR	CHANGE DATA	1.	25.	0.	1.	1.	1.	0.	3.	1.	5.	0.	4.	0.
	SOURCE IMAGE DATA	0.	0.	5.	2.	1.	1.	1.	7.	3.	0.	5.	1.	133.
262 MCN001PR	CHANGE DATA	0.	58.	22.	6.	0.	0.	0.	3.	0.	11.	0.	8.	0.
	SOURCE IMAGE DATA	2.	3.	8.	9.	16.	6.	3.	26.	7.	0.	22.	1.	14.
263 MCO001PR	CHANGE DATA	10.	326.	140.	11.	5.	0.	2.	4.	6.	27.	2.	24.	4.
	SOURCE IMAGE DATA	470.	26.	21.	65.	121.	15.	8.	153.	36.	0.	140.	6.	54.
264 MCS001PR	CHANGE DATA	1.	25.	0.	1.	1.	1.	0.	3.	1.	5.	0.	4.	0.
	SOURCE IMAGE DATA	0.	0.	2.	2.	1.	1.	1.	7.	0.	0.	5.	1.	133.

MODULE NAME		SOURCE		CHANGE DATA		RAW DATA										MODULES 265 TO 276										PAGE 23	
						DC		R-UR		CC		NR-UR		UC		KE		D-UR		KM		AO-UR		UT			
TC	NC	GN-TR	NC	GN-TR	PS	N-UR	R-UR	R-TR	LE-UR	R-TR	NR-UR	NR-TR	GE-UR	GE-TR	B-UR	B-TR	AV-UR	AV-TR	D-TR	ITE	DOU	DOU	LN-TR	LN-UR	WN	PE	
265																											
																				</							

MODULE NAME	SOURCE	IMAGE DATA	RAW DATA														MODULES 277 TO 288										PAGE 24	
			IC GN-UR	NC GN-TR	DC PS N-UR	R-UR N-TR	CC LE-UP LE-TR	HC NR-UR RE-TR	IC NR-TR GF-UP	R-UR RE-TR	KE H-TR AV-UR	D-UP AV-TR	KM D-TR ITE	AN-UP DOW	UT AN-TR DOU	LN-UP MN	PE LN-TR PC											
277 MHU001RW	SOURCE	CHANGE DATA	0. 45. 2.	29. 2.	0. 9. 4.	1. 4. 4.	0. 6. 0.	5. 0. 0.	0. 5. 0.	0. 2. 0.	0. 9. 0.	0. 2. 0.	0. 9. 0.	0. 9. 0.	0. 3. 1.	0. 593.												
278 MHV001RW	SOURCE	CHANGE DATA	1. 90. 6.	53. 8.	1. 32. 10.	8. 13. 10.	0. 32. 0.	0. 21. 0.	0. 21. 0.	0. 4. 0.	0. 23. 0.	0. 6. 0.	1. 17. 0.	0. 32. 0.	7. 2. 2.	0. 10. 9165.												
279 MHW001RW	SOURCE	CHANGE DATA	1. 220. 14.	126. 21.	1. 89. 13.	12. 33. 13.	0. 81. 2.	0. 45. 0.	0. 45. 0.	0. 10. 0.	0. 22. 46.	1. 30. 0.	1. 89. 1.	0. 89. 1.	17. 7. 7.	0. 34. 75719.												
280 MIA001RW	SOURCE	CHANGE DATA	3. 275. 9.	217. 11.	3. 55. 13.	12. 26. 13.	0. 41. 0.	0. 32. 1.	0. 32. 1.	1. 4. 61.	1. 55. 1.	1. 19. 0.	1. 55. 1.	1. 55. 1.	11. 6. 6.	2. 23. 19917.												
281 MIB001RW	SOURCE	CHANGE DATA	1. 520. 17.	357. 28.	1. 158. 17.	11. 60. 17.	0. 113. 0.	0. 89. 0.	0. 89. 0.	0. 7. 0.	0. 45. 69.	1. 24. 18.	0. 158. 3.	0. 158. 3.	35. 22. 22.	0. 84. 138033.												
282 MIE001RW	SOURCE	CHANGE DATA	1. 265. 4.	180. 16.	1. 80. 11.	11. 23. 11.	0. 76. 0.	0. 52. 0.	0. 52. 0.	1. 3. 75.	1. 11. 4.	0. 21. 0.	0. 80. 0.	0. 80. 0.	15. 5. 5.	1. 36. 53188.												
283 MIF001RW	SOURCE	CHANGE DATA	5. 263. 4.	190. 5.	3. 70. 16.	11. 32. 16.	2. 56. 0.	0. 43. 0.	0. 43. 0.	3. 15. 36.	3. 27. 0.	1. 70. 1.	1. 70. 1.	1. 70. 1.	16. 9. 9.	4. 36. 44623.												
284 MII001RW	SOURCE	CHANGE DATA	0. 43. 1.	31. 1.	0. 12. 5.	4. 6. 5.	0. 13. 0.	0. 9. 0.	0. 9. 0.	0. 1. 10.	0. 7. 0.	0. 12. 0.	0. 12. 0.	0. 12. 0.	1. 3. 1.	0. 937.												
285 MIP001RW	SOURCE	CHANGE DATA	0. 39. 1.	34. 1.	0. 5. 2.	2. 2. 2.	0. 1. 0.	0. 1. 0.	0. 1. 0.	0. 3. 7.	0. 5. 0.	0. 5. 0.	0. 5. 0.	0. 5. 0.	4. 1. 1.	0. 133.												
286 MIO001RW	SOURCE	CHANGE DATA	0. 155. 2.	111. 5.	0. 41. -6.	6. 19. -6.	0. 23. 1.	0. 20. 0.	0. 20. 0.	0. 4. 22.	0. 13. 4.	0. 41. 0.	0. 41. 0.	0. 41. 0.	13. 5. 5.	0. 26. 10584.												
287 MIP001RW	SOURCE	CHANGE DATA	7. 325. 23.	140. 28.	2. 128.	7. 19. 12.	5. 41. 2.	0. 30. 0.	0. 30. 0.	1. 9. 59.	1. 178. 0.	5. 21. 3.	1. 178. 0.	1. 178. 0.	22. 4. 4.	2. 42. 97499.												
288 MIB001RW	SOURCE	CHANGE DATA	0. 45. 1.	38. 1.	0. 13. 4.	4. 6. 6.	0. 9. 0.	0. 6. 0.	0. 6. 0.	0. 2. 10.	0. 5. 0.	0. 13. 0.	0. 13. 0.	0. 13. 0.	5. 1. 1.	0. 8. 1789.												

MODULE NAME		CHANGE DATA SOURCE IMAGE DATA		RAW DATA -----										MODULES 289 TO 300										PAGE 24							
				TC GN-UR	NC	NCM GN-TR	OC PS N-UR	R-UR N-TR	CC R-TR LE-UP	NR-TR GE-UR	UC H-UP GF-TR	KE R-TR AV-UR	D-UP AV-TR	KM D-TR ITF	AO-UR DOW	UT AO-TR DOU	LN-UR MN	PE LN-TR PC													
289	WPC001PR	CHANGE DATA	3.	150.	4.	111.	5.	36.	12.	7.	18.	0.	0.	9.	0.	14.	7.	0.	3.	9.	3.	13.	19.	0.	0.	0.	15.	5.	3.	917.	
290	WPH001CS	CHANGE DATA	7.	205.	14.	124.	19.	78.	10.	13.	85.	4.	0.	18.	0.	51.	7.	6.	4.	16.	4.	11.	29.	0.	0.	0.	15.	4.	4.	28.	60863.
291	WPP001PR	CHANGE DATA	2.	145.	5.	101.	7.	37.	10.	8.	39.	0.	0.	11.	0.	25.	3.	0.	1.	5.	3.	7.	17.	0.	0.	0.	8.	1.	1.	12297.	
292	MSA001P4	CHANGE DATA	1.	110.	6.	70.	6.	36.	15.	8.	32.	1.	0.	12.	0.	23.	5.	0.	0.	8.	3.	5.	20.	0.	0.	0.	8.	2.	0.	12.	11645.
293	MSD001PR	CHANGE DATA	0.	30.	0.	21.	0.	5.	2.	1.	0.	0.	0.	1.	0.	1.	1.	0.	0.	1.	3.	3.	5.	0.	0.	0.	4.	1.	0.	5.	133.
294	MSM001PR	CHANGE DATA	1.	70.	4.	45.	4.	18.	7.	8.	13.	1.	0.	8.	0.	10.	3.	0.	0.	4.	2.	4.	14.	0.	0.	0.	5.	1.	0.	7.	2537.
295	WST001PR	CHANGE DATA	2.	195.	0.	140.	0.	50.	9.	6.	35.	0.	0.	14.	2.	29.	5.	0.	1.	9.	3.	12.	22.	0.	0.	1.	22.	6.	2.	45.	25935.
296	MUK001PR	CHANGE DATA	2.	55.	2.	41.	3.	11.	6.	4.	8.	0.	0.	6.	0.	7.	2.	0.	2.	2.	2.	2.	10.	0.	0.	0.	11.	3.	0.	2.	960.
297	MWS001RW	CHANGE DATA	0.	40.	1.	25.	1.	8.	4.	5.	6.	0.	0.	3.	0.	4.	2.	0.	0.	0.	2.	2.	7.	0.	0.	0.	3.	1.	0.	3.	358.
298	SDS001RW	CHANGE DATA	2.	180.	3.	114.	5.	60.	12.	12.	50.	2.	0.	14.	2.	37.	7.	3.	2.	14.	4.	9.	25.	0.	0.	0.	14.	7.	2.	33.	35299.
299	SEK001RW	CHANGE DATA	2.	190.	7.	133.	15.	53.	8.	10.	45.	0.	0.	11.	0.	28.	7.	2.	1.	14.	4.	11.	22.	0.	0.	0.	17.	8.	1.	30.	27094.
300	SEX001RW	CHANGE DATA	0.	18.	1.	14.	1.	4.	2.	2.	2.	0.	0.	1.	0.	1.	2.	0.	0.	2.	1.	1.	4.	0.	0.	0.	3.	1.	0.	3.	86.

[illegible]

© 2000 Blackwell Science Ltd, *Journal of Internal Medicine* 247: 369–376

[illegible]

NADC-79163-50

APPENDIX D
DESCRIPTIVE STATISTICS FOR THE DATA

NADC-79163-50

BASIC STATISTICS FOR THE RAW DATA					

NUMBER OF DATA ITEMS = 8			NUMBER OF MODULES = 333		
NUM	CHANGE DATA	SUM	MEAN	VAR	STD DEV
1	TOTAL NUMBER OF CHANGES	462.	1.387	4.365	2.089
2	NUMBER OF DESIGN CHANGES	316.	.949	2.290	1.513
3	NUMBER OF CODE CHANGES	143.	.429	1.071	1.035
4	NUM OF UNKNOWN CHANGE AREAS	3.	.009	.009	.095
5	NUMBER OF KNOWN ERRORS	217.	.652	1.024	1.351
6	NUM OF KNOWN MODIFICATIONS	120.	.360	.599	.774
7	NUMBER OF UNKNOWN TYPE ERRORS	125.	.375	.651	.807
8	NUMBER OF POSSIBLE ERRORS	342.	1.027	3.014	1.736

BASIC STATISTICS FOR THE RAW DATA

NUMBER OF DATA ITEMS = 30

NUMBER OF MODULES = 333

NUM	SOURCE IMAGE DATA	SUM	MEAN	VAR	STD DEV
1	NUMBER OF CARDS	53614.	161.003	20548.569	143.348
2	NUMBER OF COMMENTS	35114.	105.447	8957.332	94.643
3	NUMBER OF PROCESSED CARDS	16915.	50.796	2338.615	48.359
4	REGISTERS-UNIQUE REFERENCES	2435.	7.312	14.764	3.842
5	REGISTERS-TOTAL REFERENCES	14227.	42.724	1818.514	42.644
6	NONBRANCH OPCODES-UNIQUE REFS	3749.	11.258	49.674	7.048
7	NONBRANCH OPCODES-TOTAL REFS	9740.	29.249	836.344	28.920
8	BRANCHING OPCODES-UNIQUE REFS	1697.	5.096	7.774	2.788
9	BRANCHING OPCODES-TOTAL REFS	3772.	11.327	135.046	11.621
10	DIRECTIVE OPCODES-UNIQUE REFS	1009.	3.030	.903	.950
11	DIRECTIVE OPCODES-TOTAL REFS	3403.	10.219	152.087	12.332
12	ALL OPCODES-UNIQUE REFERENCES	6455.	19.384	101.846	10.092
13	ALL OPCODES-TOTAL REFERENCES	16915.	50.796	2338.615	48.359
14	LOCAL NAMES-UNIQUE REFERENCES	4443.	13.342	133.154	11.539
15	LOCAL NAMES-TOTAL REFERENCES	8934.	26.829	899.058	29.984

BASIC STATISTICS FOR THE RAW DATA

NUMBER OF DATA ITEMS = 30

NUMBER OF MODULES = 333

NUM	SOURCE IMAGE DATA	SUM	MEAN	VAR	STD DEV
16	GLOBAL NAMES-UNIQUE REFERENCES	1905.	5.721	23.021	4.796
17	GLOBAL NAMES-TOTAL REFERENCES	2932.	8.805	109.880	10.482
18	NUMBERS-UNIQUE REFERENCES	2894.	8.691	37.431	6.118
19	NUMBERS-TOTAL REFERENCES	5474.	16.438	248.566	15.766
20	LOCAL EXPRESSIONS-UNIQUE REFS	220.	.661	2.472	1.572
21	LOCAL EXPRESSIONS-TOTAL REFS	277.	.832	5.839	2.416
22	GLOBAL EXPRESSIONS-UNIQUE REFS	145.	.435	.951	.975
23	GLOBAL EXPRESSIONS-TOTAL REFS	212.	.637	2.557	1.599
24	ALL VARIABLES-UNIQUE REFS	9607.	28.850	420.092	20.496
25	ALL VARIABLES-TOTAL REFS	17829.	53.541	2632.623	51.309
26	NUMBER OF IF-THEN-ELSEs	1324.	3.976	28.969	5.382
27	NUMBER OF DOWNFILES	26.	.078	.114	.338
28	NUMBER OF DOWNTILS	134.	.402	.663	.814
29	MCCABE NUMBER	1816.	5.453	33.755	5.810
30	PROGRAM CLARITY	14006315.	42061.006	7052248898.586	83977.669

NADC-79163-50

APPENDIX E

CORRELATION COEFFICIENTS BETWEEN
DATA ITEMS AND MEASURES OF CHANGE

NADC-79163-50

CORRELATION COEFFICIENTS OF THE RAW DATA

NUMBER OF DATA ITEMS = 8 NUMBER OF MODULES = 333

NUM	CHANGE DATA		TOTAL CHANGES		KNOWN ERRORS		POSSIBLE ERRORS	
1	TOTAL NUMBER OF CHANGES		1.000000		.853940		.934648	
2	NUMBER OF DESIGN CHANGES		.892882		.790121		.898272	
3	NUMBER OF CODE CHANGES		.725259		.572812		.568503	
4	NUM OF UNKNOWN CHANGE AREAS		.028001		-.046074		.053513	
5	NUMBER OF KNOWN ERRORS		.853940		1.000000		.892925	
6	NUM OF KNOWN MODIFICATIONS		.602828		.302077		.279730	
7	NUMBER OF UNKNOWN TYPE ERRORS		.581848		.247536		.657226	
8	NUMBER OF POSSIBLE ERRORS		.934648		.892925		1.000000	

CORRELATION COEFFICIENTS OF THE RAW DATA

NUMBER OF DATA ITEMS = 30 NUMBER OF MODULES = 333

NAME	SOURCE IMAGE DATA	TOTAL CHANGES	KNOWN ERRORS	POSSIBLE ERRORS
1	NUMBER OF CARDS	.516413	.506414	.557527
2	NUMBER OF COMMENTS	.490649	.486786	.541725
3	NUMBER OF PROCESSED CARDS	.533702	.510392	.549127
4	REGISTERS-UNIT REFERENCE	.449041	.421520	.449341
5	REGISTERS-TOTAL REFERENCES	.467402	.468847	.498015
6	NONBRANCH OPCODES-UNIQUE REFS	.437087	.419255	.437085
7	NONBRANCH OPCODES-TOTAL REFS	.484773	.485520	.509235
8	BRANCHING OPCODES-UNIQUE REFS	.421748	.388057	.459909
9	BRANCHING OPCODES-TOTAL REFS	.443828	.489175	.548194
10	DIRECTIVE OPCODES-UNIQUE REFS	.264230	.226475	.238708
11	DIRECTIVE OPCODES-TOTAL REFS	.500102	.401904	.442571
12	ALL OPCODES-UNIQUE REFERENCES	.446650	.421334	.454789
13	ALL OPCODES-TOTAL REFERENCES	.533702	.510392	.549127
14	LOCAL NAMES-UNIQUE REFERENCES	.518873	.510757	.577164
15	LOCAL NAMES-TOTAL REFERENCES	.508202	.516048	.575326

CORRELATION COEFFICIENTS OF THE RAW DATA

	NUMBER OF DATA ITEMS = 30	NUMBER OF MODULES = 333	POSSIBLE ERRORS
16	GLOBAL NAMES-UNIQUE REFERENCES	.337157	.216418
17	GLOBAL NAMES-TOTAL REFERENCES	.389404	.246447
18	NUMBERS-UNIQUE REFERENCES	.542689	.502356
19	NUMBERS-TOTAL REFERENCES	.483432	.463105
20	LOCAL EXPRESSIONS-UNIQUE REFS	.223548	.192401
21	LOCAL EXPRESSIONS-TOTAL REFS	.356614	.384193
22	GLOBAL EXPRESSIONS-UNIQUE REFS	.319023	.280114
23	GLOBAL EXPRESSIONS-TOTAL REFS	.284782	.246634
24	ALL VARIABLES-UNIQUE REFS	.565372	.516258
25	ALL VARIABLES-TOTAL REFS	.550758	.520011
26	NUMBER OF IF-THEN-ELSE	.436654	.470381
27	NUMBER OF DOWHILES	.153170	.185026
28	NUMBER OF COUNTS	.150679	.136079
29	MAXIMUM NUMBER	.433407	.463935
30	PROGRAM CLARITY	.444370	.505921

NADC-79163-50

APPENDIX F

RESULTS FOR THE TWO PARAMETER LINEAR FIT

CONSTANTS FOR EQUATION USED TO CALCULATE PREDICTED VALUES FOR TWO-PARAMETER FIT

DEPENDENT VARIABLE				
INDEPENDENT VARIABLE	RUN 1	RUN 2	RUN 3	RUN 4
MR	.1030E-01	.0	.1400E-01	.0
PC	.0	.0	.8856E-05	.4978E-05
PS	.3450E-01	.2440E-01	.0	.0
TS	.0	.0	.0	.5099E-01
CONSTANT	.2067E+00	.2171E+00	.7696E+00	.5325E+00

DEPENDENT VARIABLE		KNOWN ERROR		
INDEPENDENT VARIABLE	RUN 1	RUN 2	RUN 3	RUN 4
MR	.1100E-01	.0	.2200E-01	.0
PC	.1421E-01	.1086E-01	.0	.0
PS	.1421E-01	.1086E-01	.0	.0
TS	.0	.0	.0	.2588E-01
CONSTANT	.0	.0	.0	.1410E-01

DEPENDENT VARIABLE		POSSIBLE ERRORS		
INDEPENDENT VARIABLE	RUN 1	RUN 2	RUN 3	RUN 4
MR	.1913E-01	.0	.7022E-01	.0
PC	.0	.0	.6588E-05	.4384E-05
PS	.1747E-01	.1044E-01	.0	.0
TS	.0	.4191E-01	.0	.5573E-01
CONSTANT	.2732E-01	.2019E-01	.3679E+00	.2131E+00

MULTIPLE REGRESSION ANALYSIS: TWO PARAMETER FIT

TOTAL CHANGES RUN 1

IDENTIFY, SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	71
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	142
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	76
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
TOT	142	77	47	20	12	10	5	5	3	0	2	0	0	1	0	333

REJECTION & ACCEPTANCE CRITERIA:
 REJECT IF PREDICTED TOTAL CHANGES > OR = N; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
REJECT ACCEPTANCE	22	172	200	202	303	310	321	326	329	329
REJECT ACCEPTANCE	15.5	51.7	75.1	44.7	91.0	44.5	90.4	97.9	98.8	98.8
REJECT ACCEPTANCE	102	53	20	4	5	3	1	1	0	0
REJECT ACCEPTANCE	47.0	15.9	5.0	2.7	1.5	.9	.3	.3	.0	.0
REJECT ACCEPTANCE	19	41	34	30	22	14	11	6	4	4
REJECT ACCEPTANCE	5.7	12.3	11.7	4.0	6.6	4.2	3.3	1.6	1.2	1.2
REJECT ACCEPTANCE	100	57	20	12	3	0	0	0	0	0
REJECT ACCEPTANCE	11.1	17.1	1.2	3.0	.4	.0	.0	.9	.0	.0

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: TWO PARAMETER FCT

KNOWN ERRORS RUN 1

QUANTIZED SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES

	ACTUAL TOTAL CHANGES																TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
0	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	60
1	76	40	24	11	3	4	0	2	0	0	0	0	0	0	0	0	150
2	20	12	12	5	7	3	3	2	1	0	0	0	0	0	0	0	72
3	3	4	7	1	0	3	1	0	1	0	0	0	0	0	0	0	22
4	4	4	1	1	1	0	1	0	0	0	1	0	0	1	0	0	14
5	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	4
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
9	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	150	27	27	20	12	10	5	5	3	0	2	0	0	1	0	1	333

REJECTION & ACCEPTANCE CRITERIA:

ACCEPT IF PREDICTED TOTAL CHANGES > OR = N; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
REJECTION CRITERIA	17.5	17.5	20.0	24.3	30.4	31.6	321	320	320	329
ACCEPTANCE CRITERIA	17.5	17.5	20.0	24.3	30.4	31.6	321	320	320	329
REJECTION CRITERIA	17.5	17.5	20.0	24.3	30.4	31.6	321	320	320	329
ACCEPTANCE CRITERIA	17.5	17.5	20.0	24.3	30.4	31.6	321	320	320	329
REJECTION CRITERIA	17.5	17.5	20.0	24.3	30.4	31.6	321	320	320	329
ACCEPTANCE CRITERIA	17.5	17.5	20.0	24.3	30.4	31.6	321	320	320	329

MULTIPLE REGRESSION ANALYSIS: TWO PARAMETER FIT

POSSIBLE ERRORS RUN 1

QUANTIZED SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES

		ACTUAL TOTAL CHANGES															TOT
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
PREDICTED TOTAL CHANGES	1	12	1	3	1	5	4	2	4	1	0	0	0	0	0	0	253
	2	10	11	0	3	0	0	2	1	1	0	1	0	0	0	0	52
	3	0	3	3	3	0	1	0	0	0	0	0	0	0	0	0	14
	4	0	1	2	1	1	2	0	1	0	0	0	0	0	1	0	4
	5	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOT	142	77	45	20	12	10	5	5	3	0	2	0	0	1	0	333

REJECTION & ACCEPTANCE CRITERIA:
 REJECT IF PREDICTED TOTAL CHANGES > OR = NO ACCEPT IF < N

NO	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	0	100	257	289	305	310	321	326	329	328
	.0	57.1	77.2	88.6	91.0	92.9	95.4	97.9	98.5	98.5
CHANCE REJECTION PERCENTAGE	101	41	11	7	3	2	2	2	0	0
	50.4	12.3	3.3	2.1	.4	.6	.6	.6	.0	.0
1.0% CORRECT ACCEPTANCE PERCENTAGE	0	63	44	32	24	15	10	5	4	4
	.0	17.0	10.0	6.0	7.2	4.3	3.0	1.5	1.2	1.2
1.0% CHANCE REJECTION PERCENTAGE	102	34	17	5	1	0	0	0	1	1
	47.7	11.7	3.1	1.3	.3	.3	.0	.0	.3	.3

MULTIPLE REGRESSION ANALYSIS: TWO PARAMETER FIT

TOTAL CHANGES RUN 2

QUANTILES SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
1	17	27	14	3	4	2	3	1	0	0	0	0	0	0	0	234
2	17	14	12	4	7	4	1	2	0	0	1	0	0	0	0	68
3	5	2	1	0	0	2	0	0	1	0	0	0	0	0	0	13
4	2	3	1	2	1	0	2	0	0	0	0	0	1	0	0	12
5	1	2	1	0	1	0	0	0	0	0	1	0	0	0	0	4
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	17	11	4	29	12	10	5	5	3	0	2	0	0	1	0	333

REJECTION & ACCEPTANCE CRITERIA:

REJECT IF PREDICTED TOTAL CHANGES > OR = N; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
MEAN	0	100	250	294	303	316	321	326	328	329
STDEV	0.0	29.1	70.4	85.3	51.0	94.9	46.4	47.9	98.5	98.8
COEFF	1.1	0.5	1.4	0.8	3	2	2	2	1	0
CONST	0.0	15.0	3.4	2.4	0.9	0.0	0.5	0.6	0.3	0.0
ADJUSTED R-SQ	0	0	0.0	.31	.24	.15	.10	.5	.3	.4
UNADJUSTED R-SQ	0.0	15.0	13.0	2.3	7.2	4.0	3.0	1.5	.9	1.2
BIAS	0	0	1	19	5	0	0	0	1	0
BIAS STDEV	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: TWO PARAMETER FIT

KNOWN ERRORS RUN 2

QUANTIZED SCATTER DIAGRAM OF PREDICTED KNOWN ERRORS VS. ACTUAL KNOWN ERRORS

	ACTUAL KNOWN ERRORS																	TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT	
0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	179	
1	1	1	1	1	1	2	1	0	0	0	0	0	0	0	0	0	119	
2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	28	
3	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	5	
4	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
5	1	1	1	1	1	0	0	1	0	0	0	1	0	0	0	0	2	
6	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
7	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
8	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
9	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
10	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
11	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
12	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
13	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
14	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
15	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
TOT	232	49	23	15	5	4	2	2	0	0	0	1	0	0	0	0	333	

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED KNOWN ERRORS > OR = N; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
PERCENT ACCEPTANCE	100	24.0	30.2	31.9	32.4	32.8	33.0	33.2	33.2	33.2
PERCENT REJECTION	44.7	74.1	69.7	68.0	67.6	67.2	67.1	67.0	66.8	66.8
PERCENT ACCEPTANCE	71	14	7	2	2	0	0	0	0	0
PERCENT REJECTION	21.5	85.2	92.3	97.0	97.6	98.0	98.1	98.2	98.3	98.3
PERCENT ACCEPTANCE	30	30	24	17	7	5	3	1	1	1
PERCENT REJECTION	69.0	69.0	75.8	83.0	92.3	94.5	96.9	98.3	98.3	98.3
PERCENT ACCEPTANCE	73	21	2	0	0	0	0	0	0	0
PERCENT REJECTION	26.5	78.3	97.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: TWO PARAMETER FIT

POSSIBLE ERRORS RUN 2

QUANTIZED SCATTER DIAGRAM OF PREDICTED KNOWN ERRORS VS. ACTUAL KNOWN ERRORS

		ACTUAL KNOWN ERRORS															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
0	168	19	6	3	0	0	1	0	0	0	0	0	0	0	0	0	177
1	44	23	13	8	4	2	1	0	0	0	0	0	0	0	0	0	119
2	15	6	4	4	1	2	0	0	0	0	0	0	0	0	0	0	32
3	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	32	44	23	13	8	4	2	2	0	0	0	1	0	0	0	0	333

REJECTION & ACCEPTANCE CRITERIA:

REJECT IF PREDICTED KNOWN ERRORS > 99 = 1; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
REJECT IF	100	99.9	99.7	99.6	99.5	99.4	99.3	99.2	99.1	99.0
ACCEPT IF	99.9	99.7	99.5	99.3	99.1	98.9	98.7	98.5	98.3	98.1
REJECT IF	100	99.9	99.7	99.6	99.5	99.4	99.3	99.2	99.1	99.0
ACCEPT IF	99.9	99.7	99.5	99.3	99.1	98.9	98.7	98.5	98.3	98.1
REJECT IF	100	99.9	99.7	99.6	99.5	99.4	99.3	99.2	99.1	99.0
ACCEPT IF	99.9	99.7	99.5	99.3	99.1	98.9	98.7	98.5	98.3	98.1

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: TWO PARAMETER FIT

TOTAL CHANGES RUN 3

QUANTIZED SCATTER DIAGRAM OF PREDICTED KNOWN ERRORS VS. ACTUAL KNOWN ERRORS

		ACTUAL KNOWN ERRORS																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT	
P I C T U R E S	0	143	23	10	3	1	0	1	0	0	0	0	0	0	0	0	201	
	1	4	23	11	10	4	2	1	0	0	0	0	0	0	0	0	106	
	2	13	3	2	9	0	0	0	0	0	0	0	0	0	0	0	18	
	3	1	0	0	2	0	2	0	1	0	0	0	0	0	0	0	6	
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOT		292	49	23	15	5	4	2	2	0	0	1	0	0	0	0	333	

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED KNOWN ERRORS > OR = N ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
PERCENT ACCEPTANCE	103	264	303	319	324	328	330	331	332	332
PERCENTAGE	48.9	79.3	91.0	95.8	97.3	98.5	99.1	99.4	99.7	99.7
PERCENT REJECTION	63	9	7	2	2	1	1	0	0	0
PERCENTAGE	18.9	2.7	2.1	.6	.6	.3	.3	.0	.0	.0
PERCENT ACCEPTANCE	38	43	22	12	7	4	2	1	1	1
PERCENTAGE	11.4	12.9	6.6	3.6	2.1	1.2	.6	.3	.3	.3
PERCENT REJECTION	69	17	1	0	0	0	0	1	0	0
PERCENTAGE	20.7	5.1	.3	.0	.0	.0	.0	.3	.0	.0

MULTIPLE REGRESSION ANALYSIS: TWO PARAMETER FIT

KNOWN ERRORS. RUN 3

QUANTIZED SCATTER DIAGRAM OF PREDICTED KNOWN ERRORS VS. ACTUAL KNOWN ERRORS

		ACTUAL KNOWN ERRORS															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
0	144	23	9	3	1	0	1	0	0	0	0	0	0	0	0	0	191
1	44	22	12	10	4	2	1	0	0	0	0	0	0	0	0	0	115
2	13	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	18
3	1	1	0	2	0	2	0	1	0	0	0	0	0	0	0	0	7
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
7	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	23	44	22	12	10	4	2	2	0	0	0	1	0	0	0	0	333

REJECTION & ACCEPTANCE CRITERIA:

REJECT IF PREDICTED KNOWN ERRORS > 0.2 = 4% ACCEPT IF < 4

	1	2	3	4	5	6	7	8	9	10
REJECT IF	13.4	21.2	30.2	319	324	324	330	332	332	332
ACCEPT IF	13.4	14.0	16.1	16.8	17.3	18.5	19.1	19.7	19.7	19.7
REJECT IF	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
ACCEPT IF	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
REJECT IF	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
ACCEPT IF	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: TWO PARAMETER FIT

POSSIBLE ERRORS RUN 3

IDENTIFIED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS

		ACTUAL POSSIBLE ERRORS																
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
P R O B A B I L I T Y		27	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121
	1	17	13	14	7	2	2	1	0	0	0	0	0	0	0	0	0	145
	2	10	7	2	3	2	0	0	1	0	0	0	0	0	0	0	0	41
	3	4	2	4	2	3	1	0	0	0	0	0	0	0	0	0	0	18
	4	2	0	0	1	1	0	0	0	1	0	1	0	0	0	0	0	6
	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOT	10	10	24	10	14	5	2	1	3	0	1	0	0	0	0	0	1

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PROB. FREQ.	84	88.7	92.0	94.0	96.1	97.6	98.2	98.5	99.4	99.4
CORRECT REJECTION PROB. FREQ.	121	31	12	5	2	2	2	0	0	0
	37.7	7.3	3.6	1.5	.6	.6	.6	.0	.0	.0
1 CORRECT ACCEPTANCE PROB. FREQ.	32	44	34	22	11	6	4	5	2	2
	4.0	13.2	10.2	6.6	3.3	1.0	1.2	1.5	.6	.6
2 CORRECT ACCEPTANCE PROB. FREQ.	41	35	14	3	0	0	0	0	0	0
	47.5	19.6	4.2	.9	.0	.0	.0	.0	.0	.0

MULTIPLE REGRESSION ANALYSIS: TWO-PARAMETER FIT

TOTAL CHANGES RUN 4

IDENTIFIED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS

ACTUAL POSSIBLE ERRORS																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT	
1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
7	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	
8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
9	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
10	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
11	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	
12	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
13	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
TOT	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
REJECTION	100	100	100	100	100	100	100	100	100	100
ACCEPTANCE	0	0	0	0	0	0	0	0	0	0
REJECTION	100	100	100	100	100	100	100	100	100	100
ACCEPTANCE	0	0	0	0	0	0	0	0	0	0
REJECTION	100	100	100	100	100	100	100	100	100	100
ACCEPTANCE	0	0	0	0	0	0	0	0	0	0
REJECTION	100	100	100	100	100	100	100	100	100	100
ACCEPTANCE	0	0	0	0	0	0	0	0	0	0
REJECTION	100	100	100	100	100	100	100	100	100	100
ACCEPTANCE	0	0	0	0	0	0	0	0	0	0

MULTIPLE REGRESSION ANALYSIS: TWO PARAMETER FIT

KNOWN ERRORS RUN 4

SUMMARIZED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
1	10	2	1	0	0	0	0	0	0	0	0	0	0	0	0	65
2	1	10	1	0	0	2	1	0	0	0	0	0	0	0	0	219
3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	27
4	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	14
5	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	5
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	10	2	1	0	0	2	1	0	0	1	0	0	0	0	1	333

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
REJECT PROBABILITY	50	232	274	303	320	325	327	328	330	330
REJECT PROBABILITY	15.6	59.7	82.3	91.0	96.1	97.6	98.2	98.5	99.1	99.1
REJECT PROBABILITY	140	23	4	5	2	2	2	1	0	0
REJECT PROBABILITY	2.0	0.7	2.7	1.5	.6	.6	.6	.3	.0	.0
REJECT PROBABILITY	13	52	37	22	11	6	4	4	2	2
REJECT PROBABILITY	3.4	15.6	11.1	6.6	3.3	1.6	1.2	1.2	.6	.6
REJECT PROBABILITY	175	20	13	3	0	0	0	0	1	1
REJECT PROBABILITY	3.4	1.0	3.4	.7	.0	.0	.0	.0	.3	.3

MULTIPLE REGRESSION ANALYSIS: TWO PARAMETER FIT

POSSIBLE ERRORS RUN 4

QUANTIZED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS

		ACTUAL POSSIBLE ERRORS																		
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT		
P	0	40	20	4	0	0	0	1	0	0	0	0	0	0	0	0	0	105		
P	1	79	47	16	15	7	3	1	1	0	0	0	0	0	0	0	0	169		
P	2	16	7	7	2	4	1	0	0	1	0	0	0	0	0	0	0	38		
P	3	5	2	1	2	2	0	0	0	0	0	1	0	0	0	0	0	13		
P	4	2	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	6		
P	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
P	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
P	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
P	8	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1		
P	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
P	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
P	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
P	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
P	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
P	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
P	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TOT		105	169	38	13	6	0	0	0	1	0	0	0	0	0	0	0	333		

REJECTION & ACCEPTANCE CRITERIA:

REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
REJECTION	276	276	276	303	320	325	327	328	331	331
ACCEPTANCE	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4
REJECTION	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ACCEPTANCE	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
REJECTION	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ACCEPTANCE	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

NADC-79163-50

APPENDIX G

RESULTS FOR THE MULTIPARAMETER LINEAR FIT

ABBREVIATIONS OF PRIMARY INDEPENDENT VARIABLES

C : CODE NUMBER
 CL : CLERICAL CLARITY
 CS : CUSSES SOURCE
 TB : TOTAL BRANCHING INSTRUCTIONS

ABBREVIATIONS OF SECONDARY INDEPENDENT VARIABLES

B-TB : BRANCHING OPCODES-TOTAL REFERENCES
 B-UB : BRANCHING OPCODES-UNIQUE REFERENCES
 D-TB : DIRECTIVE OPCODES-TOTAL REFERENCES
 D-UB : DIRECTIVE OPCODES-UNIQUE REFERENCES
 G-TB : GLOBAL EXPRESSIONS-TOTAL REFERENCES
 G-UB : GLOBAL EXPRESSIONS-UNIQUE REFERENCES
 N-TB : GLOBAL NAMES-TOTAL REFERENCES
 N-UB : GLOBAL NAMES-UNIQUE REFERENCES
 L-TB : LOCAL EXPRESSIONS-TOTAL REFERENCES
 L-UB : LOCAL EXPRESSIONS-UNIQUE REFERENCES
 N-TB : LOCAL NAMES-TOTAL REFERENCES
 N-UB : LOCAL NAMES-UNIQUE REFERENCES
 N-TB : NUMBERS-TOTAL REFERENCES
 N-UB : NUMBERS-UNIQUE REFERENCES
 R-TB : REGISTER OPCODES-TOTAL REFERENCES
 R-UB : REGISTER OPCODES-UNIQUE REFERENCES
 R : RANGE OF RANGES
 R-TB : REGISTERS-TOTAL REFERENCES
 R-UB : REGISTERS-UNIQUE REFERENCES

- SE-15 FORM 1-11-11A USED TO CALCULATE PREDICTED VALUES FOR MULTI-PARAMETER FIT

	DEPENDENT VARIABLE:		TOTAL CHANGES	
	RUN 1	RUN 2	RUN 3	RUN 4
1	-.2572E+00	-.2665E+00	-.2645E+00	-.2645E+00
2	.1507E-04	.1510E-04	.1516E-04	.1516E-04
3	-.2459E-01	-.2463E-01	.0	.0
4	.0	.3164E-02	.0	-.1839E-01
5	.0	.0	-.1839E-01	.0
6	-.3357E-01	-.3424E-01	-.1926E-01	-.1926E-01
7	.0	.0	-.1592E-01	-.1592E-01
8	-.1317E+00	-.1304E+00	-.1132E+00	-.1132E+00
9	-.9235E-01	-.9393E-01	-.6676E-01	-.6676E-01
10	.6504E+00	.6503E+00	.6501E+00	.6501E+00
11	.5423E-01	.5441E-01	.4114E-01	.4114E-01
12	-.2203E-01	-.2495E-01	-.1864E-01	-.1864E-01
13	.3364E+00	.3284E+00	.2976E+00	.2976E+00
14	-.5346E+00	-.5313E+00	-.5104E+00	-.5104E+00
15	-.3563E-01	-.3607E-01	-.4057E-01	-.4057E-01
16	.1644E+00	.1647E+00	.1729E+00	.1729E+00
17	-.1376E-01	-.1371E-01	-.3435E-01	-.3435E-01
18	.1033E+00	.1031E+00	.1064E+00	.1064E+00
19	.0	.0	.1873E-01	.1873E-01
20	.501E-01	.5146E-01	.4144E-01	.4144E-01
21	.1164E-01	.1164E-01	.1206E-01	.1206E-01
22	-.4455E-01	-.4410E-01	-.4954E-01	-.4954E-01
23	.1055E+00	.1054E+00	.1065E+00	.1065E+00
24	-.5432E+00	-.5442E+00	-.5967E+00	-.5967E+00

NADC-79163-50

VALUES USED TO CALCULATE PREDICTED VALUES FROM MULTI-PARAMETER FIT

	KNOWN VALUES			
	RUN 1	RUN 2	RUN 3	RUN 4
1-1	-1.113E-01	-1.117E-01	.0	.0
1-2	.1472E-04	.1472E-04	.1472E-04	.1472E-04
1-3	.0	.5071E-01	.0	.2420E-01
1-4	.0	.0	.2420E-01	.0
1-5	-.7024E-02	-.1390E-01	.1701E-01	.1201E-01
1-6	.0	.0	.3764E-02	.3264E-02
1-7	-.5545E-01	-.4200E-01	-.1251E-01	-.1251E-01
1-8	-.6085E-01	-.7500E-01	-.2998E-01	-.2829E-01
1-9	.3441E+00	.4031E+00	.3337E+00	.3337E+00
1-10	-.2264E-01	-.2425E-01	.1392E-02	.1392E-02
1-11	-.5604E-01	-.7488E-01	-.6390E-01	-.6390E-01
1-12	.3640E+00	.3459E+00	.2926E+00	.2926E+00
1-13	-.5564E+00	-.5244E+00	-.4884E+00	-.4884E+00
1-14	-.5538E-01	-.5964E-01	-.6739E-01	-.6739E-01
1-15	.1249E+00	.1270E+00	.1325E+00	.1325E+00
1-16	-.1691E-01	-.1745E-01	-.5303E-01	-.5303E-01
1-17	.8216E-01	.8064E-01	.8620E-01	.8620E-01
1-18	.0	.0	.6301E-01	.6301E-01
1-19	.2254E-01	.2892E-01	.1165E-01	.1165E-01
1-20	.2249E-02	.2224E-02	.2866E-02	.2866E-02
1-21	-.1329E-01	-.1390E-01	-.5105E-01	-.5105E-01
1-22	.1073E+00	.1069E+00	.1081E+00	.1081E+00
1-23	-.4855E+00	-.4911E+00	-.5819E+00	-.5830E+00

CONSTANTS FOR EQUATION USED TO CALCULATE PREDICTED VALUES FOR MULTI-PARAMETER FIT

INDEPENDENT VARIABLE	DEPENDENT VARIABLE: POSSIBLE ERRORS			
	RUN 1	RUN 2	RUN 3	RUN 4
A	-.1416E+00	-.1694E+00	-.1761E+00	-.1761E+00
CE	.1-92E-04	.1521E-04	.1531E-04	.1531E-04
DS	-.5588E-01	-.5620E-01	.0	.0
FM	.0	.2712E-01	.0	-.2429E-01
Q-TF	.0	.0	-.2429E-01	.0
Q-UR	.2497E-01	.1893E-01	.4222E-01	.4222E-01
Q-TU	.0	.0	-.4271E-01	-.4271E-01
Q-UN	-.1391E+00	-.1279E+00	-.1014E+00	-.1014E+00
SE-TP	-.2114E+00	-.2242E+00	-.1822E+00	-.1822E+00
SE-TU	.7323E+00	.7403E+00	.6778E+00	.6778E+00
SE-TF	.4826E-01	.4969E-01	.2913E-01	.2913E-01
SE-UN	-.9156E-02	-.2588E-01	-.1596E-01	-.1596E-01
LE-T	.3743E+00	.3378E+00	.2898E+00	.2898E+00
LE-UF	-.4968E+00	-.4687E+00	-.4363E+00	-.4363E+00
LE-TM	-.1479E-01	-.1856E-01	-.2553E-01	-.2553E-01
LE-TU	.1444E+00	.1514E+00	.1504E+00	.1504E+00
LE-TF	-.1441E-01	-.1469E-01	-.4687E-01	-.4687E-01
LE-UF	.8783E-01	.8658E-01	.9146E-01	.9146E-01
LE-TU	.0	.0	.1101E-01	.1101E-01
SE-UN	.1747E-01	.2311E-01	.7587E-02	.7587E-02
SE	.7242E-02	.7220E-02	.7796E-02	.7796E-02
SE-T	-.712E-03	-.1519E-02	-.3484E-01	-.3484E-01
SE-TF	.1103E+00	.1099E+00	.1110E+00	.1110E+00
CONSTANT	-.4741E+00	-.4790E+00	-.5610E+00	-.5610E+00

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

TOTAL CHANGES RUN 1

NORMALIZED SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES

	ACTUAL TOTAL CHANGES																TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93
1	50	32	19	9	2	1	0	2	0	0	0	0	0	0	0	0	117
2	22	13	17	10	5	5	2	0	1	0	0	0	0	0	0	0	75
3	4	6	6	2	3	2	3	0	0	0	0	0	0	0	0	0	26
4	1	2	3	2	1	1	0	2	1	0	0	0	0	0	0	0	13
5	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	3
6	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
9	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
TOT	152	77	45	20	12	10	5	5	3	0	2	0	0	1	0	1	333

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED TOTAL CHANGES > OR = N; ACCEPT IF < N

	N=	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	65	101	252	285	304	315	321	325	328	329	
	19.5	34.4	75.7	75.6	91.3	94.6	96.4	97.6	98.5	98.8	
CORRECT REJECTION PERCENTAGE	153	75	26	13	7	5	4	3	1	1	
	45.9	22.5	7.6	3.9	2.1	1.5	1.2	.9	.3	.3	
INCORRECT ACCEPTANCE PERCENTAGE	28	29	33	26	20	12	8	14	3	3	
	8.4	8.7	9.9	7.8	.0	3.6	2.4	1.2	.9	.9	
INCORRECT REJECTION PERCENTAGE	87	46	22	11	2	1	0	1	1	0	
	26.1	14.4	5.6	2.1	.6	.3	.0	.3	.3	.0	

70

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

KNOWN ERRORS RUN 1

QUANTIZED SCATTER DIAGRAM OF PREDICTED KNOWN ERRORS VS. ACTUAL KNOWN ERRORS

		ACTUAL KNOWN ERRORS																
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
P		152	12	5	0	0	0	0	0	0	0	0	0	0	0	0	0	169
R	1	69	32	11	7	2	1	1	0	0	0	0	0	0	0	0	0	123
E	2	10	5	5	7	3	3	1	0	0	0	0	0	0	0	0	0	34
U	3	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	4
I	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
T	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
K	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
O	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT		232	49	23	15	5	4	2	2	0	0	0	1	0	0	0	0	333

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED KNOWN ERRORS > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	152 45.6	265 79.6	301 90.4	319 95.8	324 97.3	328 98.5	330 99.1	331 99.4	332 99.7	332 99.7
CORRECT REJECTION PERCENTAGE	84 25.2	25 7.5	4 1.2	3 .9	3 .9	2 .6	2 .6	1 .3	1 .3	1 .3
INCORRECT ACCEPTANCE PERCENTAGE	17 5.1	27 8.1	25 7.5	11 3.3	6 1.8	3 .9	1 .3	0 0	0 0	0 0
INCORRECT REJECTION PERCENTAGE	60 24.0	10 4.0	3 .9	0 0	0 0	0 0	0 0	1 .3	0 0	0 0

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

POSSIBLE ERRORS RUN 1

CLASSIFIED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS

		ACTUAL POSSIBLE ERRORS															TOT	
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
ACTUAL ERRORS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121
	1	70	34	12	9	2	1	1	1	0	0	0	0	0	0	0	0	135
	2	11	10	7	7	7	0	0	0	0	0	0	0	0	0	0	0	50
	3	4	1	2	2	4	4	1	0	0	0	0	0	0	0	0	0	18
	4	1	0	1	1	1	0	0	0	1	0	1	0	0	0	0	0	6
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	TOT	140	78	29	19	14	5	2	1	3	0	1	0	0	0	0	1	333

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	94 28.2	225 67.0	276 63.5	303 91.0	320 96.1	325 97.6	327 98.2	328 98.5	330 99.1	331 99.4
CORRECT REJECTION PERCENTAGE	126 37.8	44 13.2	16 5.4	6 1.8	3 .9	3 .9	2 .6	2 .6	1 .3	1 .3
INCORRECT ACCEPTANCE PERCENTAGE	27 8.1	31 9.3	28 8.4	21 6.3	10 3.0	5 1.5	4 1.2	3 .9	1 .3	1 .3
INCORRECT REJECTION PERCENTAGE	86 25.6	33 9.9	9 2.7	3 .9	0 .0	0 .0	0 .0	0 .0	1 .3	0 .0

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

TOTAL CHANGES RUN 2

QUANTIZED SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES

	ACTUAL TOTAL CHANGES																TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
P	0	65	24	4	0	0	0	0	0	0	0	0	0	0	0	0	93
R	1	60	32	15	5	7	1	0	2	0	0	0	0	0	0	0	117
E	2	22	13	17	10	5	5	2	0	1	0	0	0	0	0	0	75
U	3	4	6	6	2	3	2	3	0	0	0	0	0	0	0	0	26
I	4	1	2	3	2	1	1	0	2	1	0	0	0	0	0	0	13
C	5	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	3
T	6	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2
O	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	8	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
A	9	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
L	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
N	TOT	152	77	45	20	12	10	5	5	3	0	2	0	0	1	0	333

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED TOTAL CHANGES > OR = N; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	85	181	252	285	304	315	321	325	328	329
	17.5	34.4	75.7	85.0	91.3	94.0	96.4	97.6	98.5	98.8
CORRECT REJECTION PERCENTAGE	155	75	26	13	7	5	4	3	1	1
	45.9	22.5	7.6	3.9	2.1	1.5	1.2	.9	.3	.3
INCORRECT ACCEPTANCE PERCENTAGE	20	29	33	20	20	12	8	4	3	3
	6.7	8.7	9.9	7.6	6.0	3.0	2.4	1.2	.9	.9
INCORRECT REJECTION PERCENTAGE	87	46	22	9	2	1	0	1	1	0
	20.1	14.4	6.0	2.7	.6	.3	.0	.3	.3	.0

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

KNOWN ERRORS RUN 2

NORMALIZED SCATTER DIAGRAM OF PREDICTED KNOWN ERRORS VS. ACTUAL KNOWN ERRORS

		ACTUAL KNOWN ERRORS															TOT	
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
P	0	140	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	168
N	1	74	31	10	5	2	1	1	0	0	0	0	0	0	0	0	0	124
C	2	19	5	5	7	3	3	1	0	0	0	0	0	0	0	0	0	35
I	3	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3
E	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
O	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K	8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
N	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
R	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	101	232	44	25	15	5	4	2	2	0	0	0	1	0	0	0	0	333

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED KNOWN ERRORS > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	140 48.4	205 79.0	302 90.7	319 95.8	324 97.3	326 98.5	330 99.1	331 99.4	332 99.7	332 99.7
CORRECT REJECTION PERCENTAGE	01 24.3	25 7.5	4 1.2	3 .9	3 .9	2 .6	2 .6	1 .3	1 .3	1 .3
INCORRECT ACCEPTANCE PERCENTAGE	20 6.0	27 6.1	25 7.5	11 3.3	6 1.8	3 .9	1 .3	0 .0	0 .0	0 .0
INCORRECT REJECTION PERCENTAGE	04 25.2	16 4.8	2 .6	0 .0	0 .0	0 .0	0 .0	1 .3	0 .0	0 .0

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

POSSIBLE ERRORS RUN 2

QUANTIZED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS

	ACTUAL POSSIBLE ERRORS																TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
P	0	95	22	5	0	0	0	0	0	0	0	0	0	0	0	0	122
R	1	69	40	12	9	2	1	1	1	0	0	0	0	0	0	0	135
E	2	10	15	9	7	7	0	0	0	0	0	0	0	0	0	0	48
D	3	5	1	2	2	4	4	1	0	0	0	0	0	0	0	0	19
I	4	1	0	1	1	1	0	0	1	0	1	0	0	0	0	0	6
C	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
S	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
L	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
S	TOT	180	70	29	19	14	5	2	1	3	0	1	0	0	0	1	333

REJECTION & ACCEPTANCE CRITERIA: REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	95 25.5	22 67.9	5 15.2	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
CORRECT REJECTION PERCENTAGE	122 37.0	40 13.2	12 4.1	9 2.8	2 0.6	1 0.3	1 0.3	0 0.0	0 0.0	0 0.0
INCORRECT ACCEPTANCE PERCENTAGE	27 8.1	31 9.3	20 6.4	21 6.3	10 3.0	5 1.5	4 1.2	3 0.9	1 0.3	1 0.3
INCORRECT REJECTION PERCENTAGE	65 20.5	32 9.0	10 3.0	5 1.5	0 0.0	0 0.0	0 0.0	0 0.0	1 0.3	0 0.0

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

TOTAL CHANGES RUN 3

UNBIVIALIZED SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES

		ACTUAL TOTAL CHANGES																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT		
P R E D I C T E D T O T A L C H A N G E S	1	42	20	7	0	0	0	0	0	0	0	0	0	0	0	0	0	96	
	2	42	30	14	5	2	1	0	2	0	0	0	0	0	0	0	0	116	
	3	14	13	17	9	5	5	2	0	1	0	0	0	0	0	0	0	70	
	4	7	0	7	3	2	1	3	0	0	0	0	0	0	0	0	0	28	
	5	1	2	2	2	2	2	0	2	1	0	0	0	0	0	0	0	14	
	6	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0	3	
	7	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	
	10	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
	TOT	152	77	45	20	12	10	5	5	3	0	2	0	0	1	0	1	333	

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED TOTAL CHANGES > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	85	183	250	266	304	315	321	325	328	329
	19.5	55.0	75.1	85.9	91.3	94.0	96.4	97.6	98.5	98.8
CORRECT REJECTION PERCENTAGE	100	75	27	15	7	5	4	3	1	1
	45.0	22.5	8.1	4.5	2.1	1.5	1.2	.9	.3	.3
INCORRECT ACCEPTANCE PERCENTAGE	31	29	32	24	20	12	8	4	3	3
	9.3	6.7	9.0	7.2	6.0	3.6	2.4	1.2	.9	.9
INCORRECT REJECTION PERCENTAGE	67	46	24	8	2	1	0	1	1	0
	20.1	13.8	7.2	2.4	.6	.3	.0	.3	.3	.0

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

KNOWN ERRORS RUN 3

QUANTIZED SCATTER DIAGRAM OF PREDICTED KNOWN ERRORS VS. ACTUAL KNOWN ERRORS

	ACTUAL KNOWN ERRORS																TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
P	0	153	13	0	0	0	0	0	0	0	0	0	0	0	0	0	174
R	1	71	33	12	7	2	1	1	0	0	0	0	0	0	0	0	127
E	2	0	3	2	7	3	3	1	0	0	0	0	0	0	0	0	25
D	3	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	4
I	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
U	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	232	49	23	15	5	4	2	2	0	0	0	1	0	0	0	0	333

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED KNOWN ERRORS > OR = N; ACCEPT IF < N

N	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	100	27.0	30.1	31.9	32.4	32.8	33.0	33.1	33.2	33.2
	45.9	51.1	50.4	45.8	47.3	48.5	49.1	49.4	49.7	49.7
CORRECT REJECTION PERCENTAGE	00	21	4	3	3	3	2	1	1	1
	24.0	0.3	1.2	.7	.9	.9	.6	.3	.3	.3
INCORRECT ACCEPTANCE PERCENTAGE	21	31	25	11	6	2	1	0	0	0
	0.3	7.3	1.5	3.3	1.8	.6	.3	.0	.0	.0
INCORRECT REJECTION PERCENTAGE	19	11	3	0	0	0	0	1	0	0
	43.7	3.3	.9	.0	.0	.0	.0	.3	.0	.0

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

POSSIBLE ERRORS RUN 3

QUANTIZED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS

	ACTUAL POSSIBLE ERRORS																TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128
H	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	126
U	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	54
I	3	2	1	2	3	4	1	0	0	0	0	0	0	0	0	0	17
C	4	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	5
U	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
U	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
U	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	128	70	29	19	14	9	2	1	3	0	1	0	0	0	0	0	332

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	99	222	280	304	320	325	327	328	330	331
	29.7	60.7	67.1	71.3	76.1	77.6	78.2	78.5	79.1	79.4
CORRECT REJECTION PERCENTAGE	123	42	17	5	2	2	1	1	0	0
	35.7	12.6	5.1	1.5	.6	.6	.3	.3	.0	.0
INCORRECT ACCEPTANCE PERCENTAGE	27	32	26	21	10	5	4	3	1	1
	6.7	7.0	6.4	6.3	3.0	1.5	1.2	.9	.3	.3
INCORRECT REJECTION PERCENTAGE	61	36	7	2	0	0	0	0	1	0
	24.3	10.0	2.1	.6	.0	.0	.0	.0	.3	.0

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

TOTAL CHANGES RUN 4

QUANTIZED SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES

	ACTUAL TOTAL CHANGES																TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
P	0	65	20	5	0	0	0	0	0	0	0	0	0	0	0	0	96
R	1	62	30	14	5	2	1	0	2	0	0	0	0	0	0	0	116
U	2	10	13	17	9	5	5	2	6	1	0	0	0	0	0	0	70
I	3	6	0	7	3	2	1	3	0	0	0	0	0	0	0	0	28
C	4	1	2	2	2	2	0	2	1	0	0	0	0	0	0	0	14
T	5	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	3
O	6	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2
T	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A	8	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
L	9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
U	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
TOT	152	17	40	20	12	10	5	5	3	0	2	0	0	1	0	1	343

REJECTION & ACCEPTANCE CRITERIA:

REJECT IF PREDICTED TOTAL CHANGES > OR = N; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	65	183	250	280	304	315	321	325	326	329
	17.5	55.0	75.1	85.9	91.3	94.6	96.4	97.6	98.5	98.8
CORRECT REJECTION PERCENTAGE	100	75	27	15	7	5	4	3	1	1
	45.0	22.5	8.1	4.5	2.1	1.5	1.2	.9	.3	.3
INCORRECT ACCEPTANCE PERCENTAGE	31	29	32	24	20	12	8	4	3	3
	7.5	8.7	7.5	7.2	6.0	3.0	2.4	1.2	.7	.7
INCORRECT REJECTION PERCENTAGE	67	46	24	8	2	1	0	1	1	0
	27.1	13.0	7.2	2.4	.6	.3	.0	.3	.3	.0

NADC-73163-50

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

KNOWN ERRORS RUN 4

SCATTER DIAGRAM OF PREDICTED KNOWN ERRORS VS. ACTUAL KNOWN ERRORS

		ACTUAL KNOWN ERRORS															TOT	
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	175
1	70	33	12	7	2	1	1	0	0	0	0	0	0	0	0	0	0	126
2	0	3	2	7	3	3	1	0	0	0	0	0	0	0	0	0	0	25
3	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	232	44	23	15	5	4	2	2	0	0	0	1	0	0	0	0	0	333

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED KNOWN ERRORS > OR = N; ACCEPT IF < N

	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	154 66.2	270 61.1	301 90.4	319 95.6	324 97.3	328 98.5	330 99.1	331 99.4	332 99.7	332 99.7
CORRECT REJECTION PERCENTAGE	60 26.0	21 6.3	4 1.2	3 .9	3 .9	3 .9	2 .6	1 .3	1 .3	1 .3
INCORRECT ACCEPTANCE PERCENTAGE	21 6.3	31 9.3	25 7.5	11 3.3	6 1.8	2 .6	1 .3	0 .0	0 .0	0 .0
INCORRECT REJECTION PERCENTAGE	76 23.4	11 3.3	3 .9	0 .0	0 .0	0 .0	0 .0	1 .3	0 .0	0 .0

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: MULTI-PARAMETER FIT

POSSIBLE ERRORS RUN 4

QUANTIZED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS																	
	ACTUAL-POSSIBLE-ERRORS																
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
P	99	23	6	0	0	0	0	0	0	0	0	0	0	0	0	0	128
R	1	65	35	12	9	2	1	1	0	0	0	0	0	0	0	0	126
U	2	13	19	8	7	7	0	0	0	0	0	0	0	0	0	0	54
I	3	2	1	2	3	4	4	1	0	0	0	0	0	0	0	0	17
E	4	1	0	1	0	1	0	0	0	1	0	1	0	0	0	0	5
U	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
S	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L	9	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
E	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	180	78	29	19	14	5	2	1	3	0	1	0	0	0	0	0	332

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

	N:	1	2	3	4	5	6	7	8	9	10
--- CORRECT ACCEPTANCE ---		99	222	280	304	320	325	327	328	330	331
PERCENTAGE		29.7	66.7	84.1	91.3	96.1	97.6	98.2	98.5	99.1	99.4
--- CORRECT REJECTION ---		123	42	17	5	2	2	1	1	0	0
PERCENTAGE		36.3	12.6	5.1	1.5	.6	.6	.3	.3	.0	.0
--- INCORRECT ACCEPTANCE ---		29	32	28	21	10	5	4	3	1	1
PERCENTAGE		8.7	9.6	8.4	6.3	3.0	1.5	1.2	.9	.3	.3
--- INCORRECT REJECTION ---		51	39	7	2	0	0	0	0	1	0
PERCENTAGE		14.3	11.8	2.1	.6	.0	.0	.0	.0	.3	.0

NADC-79163-50

APPENDIX H
RESULTS FOR THE NONLINEAR FIT

 ABBREVIATIONS OF INDEPENDENT VARIABLES

AL-1:	AN ARRAY OF ONES
B-T:	BRANCHING OPCODES-TOTAL REFERENCES
B-U:	BRANCHING OPCODES-UNIQUE REFERENCES
D-T:	DIRECTIVE OPCODES-TOTAL REFERENCES
D-U:	DIRECTIVE OPCODES-UNIQUE REFERENCES
G-T:	GLOBAL EXPRESSIONS-TOTAL REFERENCES
G-U:	GLOBAL EXPRESSIONS-UNIQUE REFERENCES
N-T:	GLOBAL NAMES-TOTAL REFERENCES
N-U:	GLOBAL NAMES-UNIQUE REFERENCES
LE-T:	LOCAL EXPRESSIONS-TOTAL REFERENCES
LE-U:	LOCAL EXPRESSIONS-UNIQUE REFERENCES
LN-T:	LOCAL NAMES-TOTAL REFERENCES
LN-U:	LOCAL NAMES-UNIQUE REFERENCES
M:	MACRO NUMBER
N-T:	NUMBERS-TOTAL REFERENCES
N-U:	NUMBERS-UNIQUE REFERENCES
NB-T:	NONBRANCHING OPCODES-TOTAL REFERENCES
NB-U:	NONBRANCHING OPCODES-UNIQUE REFERENCES
C:	COUNT OF CARDS
CL:	PROGRAM CLARITY
R-T:	REGISTERS-TOTAL REFERENCES
R-U:	REGISTERS-UNIQUE REFERENCES

CONSTANTS FOR EQUATION USED TO CALCULATE PREDICTED VALUES FOR NON-LINEAR FIT

INDEPENDENT VARIABLE	DEPENDENT VARIABLE: TOTAL CHANGES			
	RUN 1	RUN 2	RUN 3	RUN 4
ALLIS	-.6706E+00	-.6753E+00	-.1089E+01	-.1283E+01
H-TR	.0	.0	-.2074E-01	.0
B-UR	-.1550E+01	-.1388E+02	-.1685E+01	-.8627E-03
D-TR	.0	.0	-.6157E-02	.1096E-02
D-UR	.1953E-01	-.2371E-01	.1986E-01	-.1978E-02
GE-TR	-.1749E+01	-.3305E+01	-.1889E+01	-.3661E-01
GE-UR	.1480E+00	.1948E+00	.1476E+00	.1916E+00
GN-TR	.5369E-02	.2179E-02	.1562E-01	.8090E-02
GN-UR	-.1604E-02	.5801E-02	-.1293E-02	-.2238E-02
LE-TR	.7542E-01	.5696E-01	.8204E-01	.5636E-01
LE-UR	-.1170E+00	-.1162E+00	-.1285E+00	-.1162E+00
LN-TR	-.2365E-01	-.1288E+01	-.5128E-02	-.2499E-02
LN-UR	.5350E-01	.4201E-01	.3679E-01	.2937E-01
MI	.0	-.7216E-01	.0	-.7587E-01
N-TR	-.6818E-02	-.6399E-02	-.3274E-03	-.3797E-02
N-UR	.2972E-01	.2272E-01	.2418E-01	.1861E-01
PH-TR	.0	.0	-.1542E-02	.7040E-02
PH-UR	.1332E-01	.2105E-01	.1579E-01	.2498E-01
PC	.1193E-02	.3391E-02	.1035E-02	.2810E-02
PC	.2567E-05	.2619E-05	.0	.0
R-TR	-.7565E-02	-.9416E-02	-.3825E-02	-.9429E-02
S-UR	.3771E-01	.3391E-01	.3279E-01	.2981E-01
CONSTANT	.1074E+01	.1177E+01	.2219E+01	.2408E+01

VALUES FOR RUNS USED TO CALCULATE PREDICTED VALUES FOR NON-LINEAR FIT

	KNOWN ERRORS			
	RUN 1	RUN 2	RUN 3	RUN 4
1-1	-.777E+00	-.777E+00	-.162E+01	-.1659E+01
1-2	.0	.0	.6475E-02	.0
1-3	-.7730E-03	.2428E-04	.6830E-02	.1061E-01
1-4	.0	.0	.5466E-02	.1740E-02
1-5	-.7373E-02	-.1066E-01	.3052E-01	.2312E-01
1-6	-.2608E-01	-.2425E-01	-.2389E-01	-.2559E-01
1-7	.1543E+00	.1577E+00	.1331E+00	.1386E+00
1-8	.4327E-02	.4141E-02	.2487E-02	.5507E-02
1-9	-.1705E-01	-.1685E-01	-.2472E-01	-.2237E-01
1-10	.1179E+00	.1167E+00	.5817E-01	.1015E+00
1-11	-.1864E+00	-.1867E+00	-.1639E+00	-.1720E+00
1-12	-.2462E-01	-.2404E-01	-.1142E-01	-.7049E-02
1-13	.6954E-01	.4902E-01	.2627E-01	.2460E-01
1-14	.0	-.232E-02	.0	-.8542E-02
1-15	-.7094E-02	-.7148E-02	-.1079E-01	-.8379E-02
1-16	.2924E-01	.2845E-01	.2304E-01	.2206E-01
1-17	.0	.0	.2418E-01	.2069E-01
1-18	.1378E-01	.1429E-01	.1544E-01	.1505E-01
1-19	.5386E-03	.7685E-03	-.3515E-03	.1355E-04
1-20	.3453E-05	.3947E-05	.0	.0
1-21	-.5837E-02	-.5906E-02	-.1186E-01	-.1076E-01
1-22	.4931E-01	.4906E-01	.3768E-01	.3908E-01
CONSTANT	.9235E+00	.9082E+00	.2397E+01	.2357E+01

CONSTANTS FOR EQUATION USED TO CALCULATE PREDICTED VALUES FOR NON-LINEAR FIT

INDEPENDENT VARIABLE	DEPENDENT VARIABLE:		POSSIBLE ERRORS	
	RUN 1	RUN 2	RUN 3	RUN 4
CELLS	-.1101E+01	-.9591E+00	-.1E44E+01	-.1E26E+01
W-TM	.0	.0	-.2187E-01	.0
W-UM	.1498E-01	.2713E-01	.2117E-01	.3601E-01
W-TN	.0	.0	-.1275E-01	-.5191E-02
W-UN	-.1317E-01	-.4457E-01	.6174E-02	-.1946E-01
GE-TM	-.6833E-01	-.8377E-01	-.6613E-01	-.8427E-01
W-UM	.2326E+00	.2721E+00	.2309E+00	.2684E+00
W-TM	.1831E-02	-.1642E-02	.593E-01	.5694E-02
W-UM	-.7806E-03	.6192E-02	-.3547E-02	-.2467E-02
W-TM	.4524E-01	.7408E-01	.8795E-01	.6274E-01
W-UM	-.1402E+00	-.1363E+00	-.1338E+00	-.1162E+00
W-TM	-.2751E-01	-.1939E-01	-.2945E-02	.4765E-04
W-UM	.5731E-01	.5847E-01	.4704E-01	.3834E-01
W-TM	.0	-.5404E-01	.0	-.6445E-01
W-TM	-.1373E-01	-.1351E-01	-.7551E-02	-.1060E-01
W-UM	.5377E-01	.2877E-01	.2844E-01	.2001E-01
W-TM	.0	.0	.2577E-02	.1160E-01
W-UM	.1088E-01	.1407E-01	.1426E-01	.1436E-01
W-TM	.7703E-02	.2703E-02	.7034E-03	.1442E-02
W-UM	.441E-01	.3440E-01	.0	.0
W-TM	-.5854E-02	-.7554E-02	-.4380E-02	-.9144E-02
W-UM	.5577E-01	.4654E-01	.4432E-01	.3811E-01
W-TM	.1441E+01	.1276E+01	.2732E+01	.2254E+01

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: NON-LINEAR FIT

TOTAL CHANGES RUN 1

QUANTIZED SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES

	ACTUAL TOTAL CHANGES																TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
P	72	25	5	0	0	0	0	0	0	0	0	0	0	0	0	0	102
R	58	33	19	9	1	1	0	1	0	0	0	0	0	0	0	0	122
E	15	14	14	5	5	3	1	1	1	0	0	0	0	0	0	0	59
D	7	5	4	3	4	3	3	1	0	0	0	0	0	0	0	0	30
I	0	0	2	0	1	1	1	1	1	0	0	0	0	1	0	0	8
C	0	0	1	2	1	2	0	0	0	0	1	0	0	0	0	0	7
T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
T	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
A	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
TOT	152	77	45	20	12	10	5	5	3	0	2	0	0	1	0	1	333

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED TOTAL CHANGES > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	72 21.6	165 56.5	255 76.6	268 66.5	301 90.4	315 94.6	320 96.1	325 97.6	328 98.5	329 98.8
CORRECT REJECTION PERCENTAGE	151 45.3	68 20.4	31 9.3	14 4.2	7 2.1	4 1.2	4 1.2	3 .9	2 .6	1 .3
INCORRECT ACCEPTANCE PERCENTAGE	30 9.0	36 10.8	28 8.4	25 7.5	20 6.0	13 3.9	8 2.4	4 1.2	2 .6	3 .9
INCORRECT REJECTION PERCENTAGE	80 24.0	41 12.3	19 5.7	6 1.8	5 1.5	1 .3	1 .3	1 .3	1 .3	0 .0

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: NON-LINEAR FIT

KNOWN ERRORS RUN 1

QUANTIZED SCATTER DIAGRAM OF PREDICTED KNOWN ERRORS VS. ACTUAL KNOWN ERRORS																
	ACTUAL KNOWN ERRORS															TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
P	0	163	18	6	0	0	0	0	0	0	0	0	0	0	0	0
R	1	59	26	10	7	2	1	1	0	0	0	0	0	0	0	0
E	2	8	5	5	5	3	3	1	0	0	0	0	0	0	0	0
D	3	2	0	2	3	2	0	0	0	0	0	0	0	0	0	0
I	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
T	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	8	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
K	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O	11	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
M	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	232	44	23	15	5	4	2	2	0	0	0	1	0	0	0	333

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED KNOWN ERRORS > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	100	99.9	99.9	99.8	99.7	99.5	99.1	99.4	99.7	99.7
CORRECT REJECTION PERCENTAGE	77	75	73	71	69	66	63	60	58	56
INCORRECT ACCEPTANCE PERCENTAGE	24	27	23	11	6	3	1	0	0	0
INCORRECT REJECTION PERCENTAGE	64	15	4	0	0	0	0	1	0	0

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: NON-LINEAR FIT

POSSIBLE ERRORS RUN 1

QUANTIZED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS

	ACTUAL POSSIBLE ERRORS																TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
P	102	23	4	0	0	0	0	0	0	0	0	0	0	0	0	0	133
R	61	39	10	12	2	1	1	1	0	0	0	0	0	0	0	0	127
E	12	15	5	4	7	0	0	0	0	0	0	0	0	0	0	0	44
D	5	1	4	1	3	3	1	0	0	0	0	0	0	0	0	0	18
I	0	0	1	2	2	1	0	0	1	0	1	0	0	0	0	0	8
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	180	76	29	19	14	5	2	1	3	0	1	0	0	0	0	0	332

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	102 30.6	225 67.6	276 82.9	303 91.0	320 96.1	325 97.6	327 98.2	328 98.5	330 99.1	331 99.4
CORRECT REJECTION PERCENTAGE	121 36.3	39 11.7	17 5.1	7 2.1	2 .6	2 .6	1 .3	1 .3	0 .0	0 .0
INCORRECT ACCEPTANCE PERCENTAGE	31 9.3	35 10.5	28 8.4	19 5.7	10 3.0	5 1.5	4 1.2	3 .9	1 .3	1 .3
INCORRECT REJECTION PERCENTAGE	78 23.4	33 9.9	11 3.3	3 .9	0 .0	0 .0	0 .0	0 .0	1 .3	0 .0

MULTIPLE REGRESSION ANALYSIS: NON-LINEAR FIT

TOTAL CHANGES RUN 2

QUANTIZED SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES																
	ACTUAL TOTAL CHANGES															TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
P	0	65	24	6	0	0	0	0	0	0	0	0	0	0	0	0
R	1	68	34	17	5	2	1	0	2	0	0	0	0	0	0	0
E	2	14	13	13	10	4	4	1	0	1	0	0	0	0	0	0
O	3	5	4	5	2	4	2	2	0	0	0	0	0	0	0	0
I	4	0	2	2	1	1	1	2	2	0	0	0	0	0	0	0
C	5	0	0	1	1	1	2	0	0	1	0	0	0	0	1	0
T	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	7	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
A	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L	9	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
C	10	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
H	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	TOT	142	77	45	20	12	10	5	5	3	0	2	0	0	1	0
																332

REJECTION & ACCEPTANCE CRITERIA:
 REJECT IF PREDICTED TOTAL CHANGES > OR = N; ACCEPT IF < N

	N	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	05	191	254	286	302	315	320	325	328	329	329
	19.5	57.4	76.3	85.9	90.7	94.6	96.1	97.6	98.5	98.8	
CORRECT REJECTION PERCENTAGE	150	70	26	15	8	4	4	2	0	0	0
	44.0	21.0	7.4	4.3	2.4	1.2	1.2	.6	.0	.0	
EXCEPT ACCEPTANCE PERCENTAGE	30	33	36	23	14	12	7	4	3	3	3
	9.0	9.9	9.0	6.4	5.4	3.6	2.1	1.2	.9	.9	
EXCEPT REJECTION PERCENTAGE	67	36	20	8	4	1	1	1	1	0	0
	20.1	11.4	6.0	2.4	1.2	.3	.3	.3	.3	.0	

MULTIPLE REGRESSION ANALYSIS: NON-LINEAR FIT

KNOWN ERRORS RUN 2

QUANTIZED SCATTER DIAGRAM OF PREDICTED KNOWN ERRORS VS. ACTUAL KNOWN ERRORS

		ACTUAL KNOWN ERRORS																
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
		164	17	7	0	0	0	0	0	0	0	0	0	0	0	0	0	188
P	1	58	27	9	7	2	1	1	0	0	0	0	0	0	0	0	0	105
R	2	2	5	5	3	3	1	0	0	0	0	0	0	0	0	0	0	30
E	3	2	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	7
I	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
T	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	11	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
N	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT		232	49	23	15	5	4	2	2	0	0	0	1	0	0	0	0	333

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED KNOWN ERRORS > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	16%	266	300	312	324	328	330	331	332	332
	49.2	79.9	90.1	95.8	97.3	98.5	99.1	99.4	99.7	99.7
CORRECT REJECTION PERCENTAGE	77	25	6	3	3	2	2	1	1	1
	23.1	7.5	1.6	.9	.9	.6	.6	.3	.3	.3
INCORRECT ACCEPTANCE PERCENTAGE	4%	27	23	11	6	3	1	0	0	0
	7.2	8.1	6.9	3.3	1.8	.9	.3	.0	.0	.0
INCORRECT REJECTION PERCENTAGE	68	15	4	0	0	0	0	1	0	0
	20.4	4.5	1.2	.0	.0	.0	.0	.3	.0	.0

MULTIPLE REGRESSION ANALYSIS: NON-LINEAR FIT

POSSIBLE ERRORS RUN 2

QUANTIZED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS

	ACTUAL POSSIBLE ERRORS																TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
P	0	100	24	5	0	0	0	0	0	0	0	0	0	0	0	0	130
R	1	67	38	13	11	2	1	1	1	0	0	0	0	0	0	0	134
E	2	10	15	5	5	6	0	0	0	0	0	0	0	0	0	0	41
D	3	3	1	3	2	4	3	1	0	0	0	0	0	0	0	0	17
T	4	0	0	1	1	2	1	0	0	1	0	1	0	0	0	0	7
E	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
D	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
S	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A	9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
L	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	140	74	24	14	14	5	2	1	3	0	1	0	0	0	0	0	332

REJECTION & ACCEPTANCE CRITERIA:
 REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	100	274	276	303	319	325	327	328	330	331
	30.0	83.5	83.5	91.0	95.0	97.0	98.2	98.5	99.1	99.4
CORRECT REJECTION PERCENTAGE	122	34	18	7	2	2	1	1	0	0
	36.6	11.7	5.4	2.1	.6	.6	.3	.3	.0	.0
INCORRECT ACCEPTANCE PERCENTAGE	30	35	27	19	10	5	4	3	1	1
	9.0	10.5	8.1	5.7	3.0	1.5	1.2	.9	.3	.3
INCORRECT REJECTION PERCENTAGE	40	29	9	3	1	0	0	0	1	0
	12.0	8.7	2.7	.9	.3	.0	.0	.0	.3	.0

MULTIPLE REGRESSION ANALYSIS: NON-LINEAR FIT

TOTAL CHANGES RUN 3

QUANTIZED SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES																	
	ACTUAL TOTAL CHANGES																
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
P	58	21	5	2	0	0	0	0	0	0	0	0	0	0	0	0	85
R	73	38	18	7	2	1	0	2	0	0	0	0	0	0	0	0	141
E	15	14	11	8	5	4	1	0	1	0	0	0	0	0	0	0	60
I	5	4	7	2	2	2	3	1	0	0	0	0	0	0	0	0	26
T	1	0	2	0	1	1	1	1	0	0	0	0	0	0	0	0	7
D	5	0	0	1	1	1	2	0	0	1	0	0	0	0	1	0	7
T	0	0	0	0	2	0	0	0	1	0	1	0	0	0	0	0	4
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	152	77	45	20	12	10	5	5	3	0	2	0	0	1	0	0	332

REJECTION & ACCEPTANCE CRITERIA:										
REJECT IF	PREDICTED TOTAL CHANGES									
	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	58	190	254	287	301	314	321	325	329	329
	17.4	57.1	76.3	86.2	90.4	94.3	96.4	97.6	98.8	98.8
CORRECT REJECTION PERCENTAGE	153	67	26	13	8	4	2	1	0	0
	45.9	20.1	7.8	3.9	2.4	1.2	.6	.3	.0	.0
INCORRECT ACCEPTANCE PERCENTAGE	27	36	32	25	18	12	9	5	3	3
	8.1	10.8	9.6	7.5	5.4	3.6	2.7	1.5	.9	.9
INCORRECT REJECTION PERCENTAGE	94	39	20	7	5	2	0	1	0	0
	28.2	11.7	6.0	2.1	1.5	.6	.0	.3	.0	.0

MULTIPLE REGRESSION ANALYSIS: NON-LINEAR FIT

KNOWN ERRORS RUN 3

QUANTIZED SCATTER DIAGRAM OF PREDICTED KNOWN ERRORS VS. ACTUAL KNOWN ERRORS																
	ACTUAL KNOWN ERRORS															TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
P	0	165	18	7	0	0	0	0	0	0	0	0	0	0	0	0
R	1	56	27	10	8	1	0	1	0	0	0	0	0	0	0	0
E	2	9	4	5	4	4	3	1	0	0	0	0	0	0	0	0
C	3	2	0	1	3	0	1	0	0	0	0	0	0	0	0	0
I	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
E	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	11	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
R	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	332	64	23	15	5	4	2	2	0	0	0	1	0	0	0	333

REJECTION & ACCEPTANCE CRITERIA:
 REJECT IF PREDICTED KNOWN ERRORS > CR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	100	99.9	99.1	98.6	97.3	96.5	95.1	93.7	92.7	92.7
CORRECT REJECTION PERCENTAGE	76	25	7	3	3	2	1	1	1	1
INCORRECT ACCEPTANCE PERCENTAGE	25	27	22	11	6	3	2	0	0	0
INCORRECT REJECTION PERCENTAGE	24.1	15	3	0	0	0	0	0	0	0

MULTIPLE REGRESSION ANALYSIS: NON-LINEAR FIT

POSSIBLE ERRORS RUN 3

QUANTIZED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS

	ACTUAL POSSIBLE ERRORS																TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
P	0	104	24	5	1	0	0	0	0	0	0	0	0	0	0	0	135
R	1	41	37	10	11	2	1	1	1	0	0	0	0	0	0	0	124
E	2	11	16	5	5	7	1	0	0	0	0	0	0	0	0	0	49
D	3	3	1	1	0	3	2	1	0	0	0	0	0	0	0	0	13
O	4	1	0	2	1	2	1	0	0	1	0	1	0	0	0	0	9
S	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
S	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
I	7	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
J	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	140	76	29	19	14	5	2	1	3	0	1	0	0	0	0	0	332

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	104 31.2	225 67.9	277 83.2	301 90.4	319 95.6	325 97.6	327 98.2	328 98.5	331 99.4	331 99.4
CORRECT REJECTION PERCENTAGE	121 36.3	41 12.3	15 4.5	7 2.1	2 .6	2 .6	1 .3	0 .0	0 .0	0 .0
INCORRECT ACCEPTANCE PERCENTAGE	31 9.3	33 9.9	30 9.0	19 5.7	10 3.0	5 1.5	4 1.2	4 1.2	1 .3	1 .3
INCORRECT REJECTION PERCENTAGE	76 22.4	32 9.6	10 3.0	5 1.5	1 .3	0 .0	0 .0	0 .0	0 .0	0 .0

NADC-79163-50

MULTIPLE REGRESSION ANALYSIS: NON-LINEAR FIT

TOTAL CHANGES RUN 4

QUANTIZED SCATTER DIAGRAM OF PREDICTED TOTAL CHANGES VS. ACTUAL TOTAL CHANGES

	ACTUAL TOTAL CHANGES															TOT
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PREDICTED	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	5	14	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1	7	24	17	5	2	1	0	2	0	0	0	0	0	0	0	0
2	17	14	11	5	4	0	0	0	1	0	0	0	0	0	0	0
3	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0
4	0	1	3	1	1	2	2	2	1	0	0	0	0	0	0	0
5	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
6	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0
7	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOT	152	77	23	20	12	10	5	5	3	0	2	0	0	1	0	0

REJECTION & ACCEPTANCE CRITERIA:
REJECT IF PREDICTED TOTAL CHANGES > OR = N; ACCEPT IF < N

	0	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	50	141	252	286	302	315	321	325	329	329	329
	16.0	57.6	75.7	85.4	90.7	94.6	96.4	97.6	98.8	98.8	98.8
CORRECT REJECTION PERCENTAGE	153	60	24	15	6	4	3	1	1	0	0
	45.9	20.4	8.4	4.5	1.8	1.2	.9	.3	.3	.0	.0
INCORRECT ACCEPTANCE PERCENTAGE	27	35	30	23	20	12	8	5	2	3	3
	9.1	10.5	9.0	6.9	6.0	3.6	2.4	1.5	.6	.9	.9
INCORRECT REJECTION PERCENTAGE	90	35	22	8	4	1	0	1	0	0	0
	24.9	11.4	6.5	2.4	1.2	.3	.0	.3	.0	.0	.0

1. THE PROBLEM

KNOW ERRORS PTE 4

ACTUAL KNOWN ERRORS

REJECTION & ACCEPTANCE CRITERIA:

	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	105 49.5	205 60.5	300 90.1	319 95.6	324 97.3	325 98.5	330 99.1	332 99.7	332 99.7	332 99.7
CORRECT REJECTION PERCENTAGE	70 22.8	24 7.4	0 1.0	3 .9	3 .9	2 .6	1 .3	1 .3	1 .3	1 .3
INCORRECT ACCEPTANCE PERCENTAGE	25 7.5	25 7.5	25 7.5	11 3.3	0 0	3 .9	2 .6	0 0	0 0	0 0
INCORRECT REJECTION PERCENTAGE	57 20.1	13 3.9	4 1.2	0 .0	0 .0	0 .0	0 0	0 0	0 0	0 0

MULTIPLE REGRESSION ANALYSIS: NON-LINEAR FIT

POSSIBLE ERRORS RUN 4

QUANTIZED SCATTER DIAGRAM OF PREDICTED POSSIBLE ERRORS VS. ACTUAL POSSIBLE ERRORS

		ACTUAL POSSIBLE ERRORS															TOT	
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT
P R E D I C T E D P O S S I B L E E R R O R S	0	97	29	5	0	0	0	0	0	0	0	0	0	0	0	0	0	131
	1	69	31	12	11	2	1	1	1	0	0	0	0	0	0	0	0	128
	2	10	17	8	4	4	2	0	0	0	0	0	0	0	0	0	0	45
	3	3	1	2	3	5	1	1	0	0	0	0	0	0	0	0	0	17
	4	1	0	2	0	2	1	0	0	1	0	0	0	0	0	0	0	7
	5	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	3
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOT		180	74	29	19	14	5	2	1	3	0	1	0	0	0	0	0	332

 REJECTION & ACCEPTANCE CRITERIA:
 REJECT IF PREDICTED POSSIBLE ERRORS > OR = N; ACCEPT IF < N

N:	1	2	3	4	5	6	7	8	9	10
CORRECT ACCEPTANCE PERCENTAGE	97	226	278	302	319	325	327	328	331	331
	29.1	67.9	83.5	90.7	95.8	97.6	98.2	98.5	99.4	99.4
CORRECT REJECTION PERCENTAGE	118	41	19	7	3	1	1	0	0	0
	35.4	12.3	5.7	2.1	.9	.3	.3	.0	.0	.0
INCORRECT ACCEPTANCE PERCENTAGE	38	33	26	19	9	6	4	4	1	1
	10.2	9.9	7.8	5.7	2.7	1.8	1.2	1.2	.3	.3
INCORRECT REJECTION PERCENTAGE	83	32	9	4	1	0	0	0	0	0
	24.9	9.6	2.7	1.2	.3	.0	.0	.0	.0	.0

D I S T R I B U T I O N L I S T

REPORT NO. NADC-79163-50

AIRTASK NO. ZF61412001

Work Unit No. GC333

	<u>No. of Copies</u>
NAVAIRSYSCOM, AIR-950D	4
(2 for retention)	
(2 for AIR-530)	
DDC	12