DLS 26-FEB-74 14:28 30147

RADC User Stats 15JUL73-26JAN74, by week

25 pages...see branch named total for summary

RADC User Stats 15JUL73-26JAN74, by week

This file contains the weekly data received from BAH for the period 15 JUL 73 through 26 JAN 74...roughly the time we switched to OFFICE-1.

1

RADC User Stats 15JUL73-26JAN74, by week

20JAN 26JAN (HJOURNAL, 21860,RAD:w)

NAME	CPU HRS	CON HRS	%SYS
BERGS	.154	5.876	.258
CARRI	.048	1.767	.081
CAVAN	.083	4.438	.139
DAUGH	.001	.015	.002
IUORN	.033	1.867	.055
KENNE	.312	14.206	.524
LAFOR	.021	1.409	.035
LAMON	.041	2.828	.069
LAWRE	.116	6.466	.195
MCNAM	.017	1.004	.029
PANAR	.056	1.569	.094
RZEPK	.213	12.002	.357
STONE	.386	16.675	.648
THAYE	.022	.714	.037
TOMAI	.025	.847	.042
WINGF	.038	1.958	.064
	-----	-----	----
TOTAL	1.566	73.641	2.62

RADC User Stats 15JUL73-26JAN74, by week

13JAN 19JAN (HJOURNAL, 21859,RAD:w)

NAME	CPU HRS	CON HRS	% SYS
BERGS	.004	.061	.014
CARRI	.023	1.309	.082
CAVAN	.074	4.942	.264
IUORN	.012	.374	.043
KENNE	.157	6.169	.560
LAMON	.071	1.517	.253
LAWRE	.122	4.664	.435
MCNAM	.018	1.295	.064
PANAR	.122	5.912	.435
RZEPK	.042	2.811	.150
STONE	.279	9.200	.994
THAYE	.006	.107	.021
TOMAI	.016	.489	.057
TOTAL	.946	38.850	3.372

RADC User Stats 15JUL73-26JAN74, by week

06JAN 12JAN (HJOURNAL, 21858,RAD:w)

NAME	CPU HRS	CON HRS	% SYS
BERGS	.151	8.226	.226
CARRI	.081	3.870	.121
CAVAN	.169	26.511	.253
DAUGH	.048	2.109	.072
IUORN	.107	4.916	.160
KENNE	.165	9.028	.247
LAFOR	.026	1.121	.039
LAMON	.151	5.604	.226
LAWRE	.128	5.604	.192
LIUZZ	.011	.828	.016
MCNAM	.030	2.463	.045
PANAR	.276	12.698	.413
STONE	.372	16.767	.557
THAYE	.072	4.661	.108
TOMAI	.021	.511	.031
WINGF	.003	.041	.004
TOTAL	1.811	104.958	2.710

RADC User Stats 15JUL73-26JAN74, by week

30DEC 05JAN (HJOURNAL, 21857,RAD:w)

NAME	CPU HRS	CON HRN	% SYS
CARRI	.029	1.348	.073
CAVAN	.122	5.794	.305
DAUGH	.034	1.732	.085
IUORN	.048	1.530	.120
KENNE	.181	6.322	.453
LAFOR	.012	.660	.030
LAWRE	.018	1.665	.045
LIUZZ	.009	.879	.023
MCNAM	.029	3.277	.073
PANAR	.278	11.211	.696
RZEPK	.021	.892	.053
STONE	.469	20.099	1.174
THAYE	.024	.850	.060
TOMAI	.019	.738	.048
WINGF	.003	.056	.008
TOTAL	1.296	57.053	3.246

RADC User Stats 15JUL73-26JAN74, by week

23DEC 29DEC (HJOURNAL, 21855,RAD:w)

NAME	CPU HRS	CON HRS	% SYS
BERGS	.004	.059	.010
CARRI	.003	.048	.008
CAVAN	.249	11.121	.649
KENNE	.114	4.254	.297
LAWRE	.034	2.193	.089
PANAR	.158	6.602	.412
STONE	.206	7.806	.537
THAYE	.019	1.439	.050
TOMAI	.011	.329	.029
WINGF	.018	.614	.047
TOTAL	.816	34.465	2.128

RADC User Stats 15JUL73-26JAN74, by week

16DEC 22DEC (MJOURNAL, 21227,RAD:w)

NAME	CPU HRS	CON HRS	% SYS
BERGS	.040	1.312	.081
CARRI	.120	5.224	.244
CAVAN	.234	11.053	.476
DAUGH	.085	4.971	.173
IUORN	.067	3.561	.136
KENNE	.091	4.132	.185
LAFOR	.026	2.002	.053
LAWRE	.121	3.982	.246
LIUZZ	.187	8.235	.380
MCNAM	.027	1.334	.055
PANAR	.130	7.987	.264
STONE	.483	22.608	.982
THAYE	.052	3.808	.106
TOMAI	.041	1.158	.083
WINGF	.002	.095	.004
TOTAL	1.706	81.462	3.468

RADC User Stats 15JUL73-26JAN74, by week

09DEC 15DEC (MJOURNAL, 21192,RAD:w)

NAME	CPU HRS	CON HRS	% SYS
BERGS	.174	7.039	.320
CARRI	.090	4.734	.166
CAVAN	.132	7.171	.243
DAUGH	.069	3.937	.127
IUORN	.075	3.473	.138
KENNE	.266	12.302	.490
LAFOR	.033	1.606	.061
LAWRE	.504	13.138	.928
LIUZZ	.085	3.781	.157
MCNAM	.057	3.920	.105
PANAR	.220	7.793	.405
RADC	.002	.414	.004
RZEPK	.002	.341	.004
STONE	.882	40.451	1.624
TOMAI	.126	3.899	.232
WINGF	.004	.126	.007
TOTAL	2.721	114.125	5.011

RADC User Stats 15JUL73-26JAN74, by week

02DEC 08DEC (MJOURNAL, 20910,RAD:w)

NAME	CPU HRS	CON HR	% SYS
BERGS	.343	17.814	.536
CARRI	.054	2.182	.084
CAVAN	.308	20.616	.481
DAUGH	.085	3.638	.133
IUORN	.018	.405	.028
KENNE	.151	4.421	.236
LAFOR	.036	1.247	.056
LAMON	-	-	-
LAWRE	1.074	33.269	1.679
LIUZZ	.126	5.174	.197
MCNAM	.043	3.247	.067
PANAR	.379	19.764	.592
RADC	-	-	-
RZEPK	.019	1.198	.030
STONE	.810	33.970	1.266
TOMAI	.025	.572	.039
WINGF	.004	.102	.006
	-----	-----	-----
TOTAL	3.475	147.619	5.430

RADC User Stats 15JUL73-26JAN74, by week

25NOV 01DEC (IJOURNAL, 20706,RAD:w)

NAME	CPU HRS	CON HR	% SYS
BERGS	.210	7.019	.306
CARRI	.170	7.478	.247
CAVAN	.300	13.523	.437
DAUGH	.149	9.539	.217
IUORN	.026	.559	.038
KENNE	.299	11.912	.435
LAFOR	.059	1.817	.086
LAMON	.021	1.012	.031
LAWRE	.088	7.703	.128
LIUZZ	.146	6.999	.213
MCNAM	.033	1.358	.048
PANAR	.368	13.768	.536
RZEPK	.078	3.216	.114
STONE	.321	13.251	.467
THAYE	.018	.692	.026
TOMAI	.052	1.998	.076
TOTAL	2.338	101.844	3.405

RADC User Stats 15JUL73-26JAN74, by week

18NOV 24NOV (IJOURNAL, 20642,RAD:w)

NAME	CPU HRS	CON HR	% SYS
BERGS	.226	9.652	.455
CARRI	.219	11.885	.441
CAVAN	.044	1.866	.089
DAUGH	.022	.718	.044
IUORN	.115	6.046	.232
KENNE	.364	11.842	.733
LAFOR	.008	.495	.016
LAMON	.082	4.937	.165
LAWRE	.277	7.336	.558
LIUZZ	.082	4.371	.165
MCNAM	.008	.593	.016
PANAR	.101	5.111	.203
RADC	.007	.180	.014
RZEPK	.159	10.207	.320
STONE	.329	13.989	.662
THAYE	.024	.429	.048
TOMAI	.065	2.557	.131
	-----	-----	-----
TOTAL	2.132	92.214	4.292

RADC User Stats 15JUL73-26JAN74, by week

11NOV 17NOV (IJOURNAL, 20454,RAD:w) 12

RADC User Stats 15JUL73-26JAN74, by week

04NOV 10NOV (IJOURNAL, 20455,RAD:w)

NAME	CPU HRS	CON HR	% SYS
BERGS	.069	4.542	.123
CAVAN	.182	9.489	.325
DAUGH	.001	.008	.002
IUORN	.042	2.827	.075
KENNE	.197	9.099	.352
LAFOR	.007	.180	.013
LAMON	.198	11.753	.354
LAWRE	.019	.932	.034
LIUZZ	.001	.010	.002
MCNAM	.170	12.636	.304
PANAR	.177	5.890	.316
RADC	.047	1.905	.084
RZEPK	.494	24.072	.882
STONE	.564	25.111	1.007
THAYE	.007	.306	.013
TOMAI	.142	5.426	.254
OTHER	.122	8.324	.218
	-----	-----	-----
TOTAL	2.439	122.510	4.358

RADC User Stats 15JUL73-26JAN74, by week

28OCT 03NOV (IJOURNAL, 20456,RADC:w)

NAME	CPU HRS	CON HR	% SYS
BERGS	.060	2.812	.101
BETHK	.129	6.256	.217
CAVAN	.145	8.297	.244
IUORN	.026	2.058	.044
KENNE	.228	10.473	.384
LAMON	.667	19.873	1.123
LAWRE	.206	24.469	.347
MCNAM	.049	3.741	.083
PANAR	.191	12.504	.322
RADC	.059	2.043	.099
RZEPK	.371	25.305	.625
STONE	.321	15.599	.541
THAYE	.022	1.887	.037
TOMAI	.064	2.799	.108
TOTAL	2.538	138.116	4.275

RADC User Stats 15JUL73-26JAN74, by week

21OCT 27OCT (IJOURNAL, 20457,RADC:w) 15

15a

NAME	CPU HRS	CON HR	% SYS	
				15b
				15c
BERGS	.204	8.374	.370	15d
CAVAN	.156	7.716	.283	15e
IUORN	.015	1.587	.027	15f
KENNE	.409	13.149	.742	15g
LAMON	.740	18.669	1.342	15h
LAWRE	.132	9.686	.239	15i
MCNAM	.062	4.769	.112	15j
PANAR	.206	11.472	.374	15k
RZEPK	.153	21.024	.278	15l
STONE	.301	8.960	.546	15m
THAYE	.014	1.030	.025	15n
TOMAI	.096	4.637	.174	15o
OTHER	.003	.058	.005	15p
OTHER	.065	4.876	.118	15q
	-----	-----	-----	15r
TOTAL	2.556	116.007	4.635	15s

15t

RADC User Stats 15JUL73-26JAN74, by week

140CT 200CT (IJOURNAL, 20209,RADC:w) 16

16a

NAME	CPU HRS	CON HR	% SYS	
				16b
				16c
BERGS	.026	1.496	.038	16d
BETHK	.223	13.863	.327	16e
CAVAN	.320	13.344	.469	16f
IUORN	.028	3.134	.041	16g
KENNE	.344	13.119	.504	16h
LAMON	.314	12.169	.460	16i
LAWRE	.173	8.057	.254	16j
MCNAM	.036	2.460	.053	16k
PANAR	.124	6.024	.182	16l
RADC	.038	2.001	.056	16m
RZEPK	.155	11.607	.227	16n
RADC	.038	2.001	.056	16o
RZEPK	.155	11.607	.227	16p
STONE	.312	12.159	.457	16q
THAYE	.161	7.025	.236	16r
TOMAI	.070	1.902	.103	16s
	-----	-----	-----	16t
TOTAL	2.517	121.968	3.690	16u
				16v

RADC User Stats 15JUL73-26JAN74, by week

07OCT 13OCT (LJOURNAL, 19725,RADC:w)

NAME	CPU HRS	CON HR	% SYS
BERGS	.396	28.643	.609
BETHK	.121	7.850	.186
CAVAN	.150	8.074	.231
IUORN	.072	3.796	.111
KENNE	.215	12.257	.331
LAMON	.268	8.089	.412
LAWRE	.164	16.888	.252
MCNAM	.130	6.201	.200
PANAR	.193	9.006	.297
RZEPK	.032	2.709	.049
SLIWA	.003	.053	.005
STONE	.450	16.117	.692
THAYE	.011	.640	.017
TOMAI	.064	2.839	.098
TOTAL	2.269	123.162	3.490

RADC User Stats 15JUL73-26JAN74, by week

JOSEP 06OCT (LJOURNAL, 19730,RADC:w)

NAME	CPU HRS	CON HR	% SYS
BERGS	.250	17.397	.465
BETHK	.167	7.633	.311
CAVAN	.204	25.876	.380
IUORN	.082	5.538	.153
KENNE	.301	15.908	.560
LAMON	.348	9.249	.648
LAWRE	.127	9.897	.236
MCNAM	.311	15.407	.579
PANAR	.279	14.633	.519
RADC	.024	2.014	.045
SLIWA	.010	.488	.019
STONE	.440	20.212	.819
THAYE	.004	.215	.007
TOMAI	.229	12.683	.426
	-----	-----	-----
(TOT)	2.776	157.150	5.597

RADC User Stats 15JUL73-26JAN74, by week

26AUG 01SEP (JJOURNAL, 18836,RADC:w)

NAME	CPU HRS	CON HR	% SYS
BAIR	.752	37.229	1.402
BERGS	-	-	-
BETHK	.169	5.636	.315
CAVAN	.137	9.726	.255
IUORN	.061	6.226	.114
KENNE	.182	9.187	.339
LAMON	-	-	-
LAWRE	.165	8.607	.308
MCNAM	.084	4.123	.157
PANAR	.112	5.959	.209
RADC	.042	1.953	.078
RZEPK	-	-	-
SLIWA	-	-	-
STONE	.283	14.766	.528
THAYE	.030	1.792	.056
TOMAI	.143	9.994	.267
	-----	-----	-----
(TOTAL)	2.160	115.198	4.028

RADC User Stats 15JUL73-26JAN74, by week

19AUG 25AUG (JJOURNAL, 18944,RADC:w)

NAME	CPU HRS	CON HR	% SYS
BAIR	.564	27.842	.999
BERGS	.050	1.758	.089
BETHK	.079	3.316	.140
CAVAN	.281	16.021	.498
IUORN	-	-	-
KENNE	.180	8.724	.319
LAMON	-	-	-
LAWRE	.076	2.283	.135
MCNAM	.126	4.379	.223
PANAR	.483	23.465	.856
RADC	.051	2.791	.090
RZEPK	-	-	-
SLIWA	.005	.145	.009
STONE	.656	27.046	1.162
THAYE	.034	1.590	.060
TOMAI	.154	9.627	.273
(TOTAL)	2.739	128.987	4.853

RADC User Stats 15JUL73-26JAN74, by week

12AUG 18AUG (MJOURNAL, 18530,RADC:w) 21

21a

NAME	CPU HRS	CON HR	% SYS	
				21b
				21c
BAIR	.420	43.498	.758	21d
BERGS	.072	12.242	.130	21e
BETHK	.118	4.217	.213	21f
CAVAN	.097	6.050	.175	21g
IUORN	.001	.030	.002	21h
KENNE	.168	30.324	.303	21i
LAMON	.502	9.691	.906	21j
LAWRE	.076	4.069	.137	21k
MCNAM	.059	4.189	.107	21l
PANAR	.056	2.863	.101	21m
RADC	.008	.125	.014	21n
RZEPK	-	-	-	21o
SLIWA	.002	.056	.004	21p
STONE	.714	21.807	1.289	21q
THAYE	-	-	-	21r
TOMAI	.008	.158	.014	21s
	-----	-----	-----	21t
(TOTAL)	2.301	139.319	4.153	21u

21v

RADC User Stats 15JUL73-26JAN74, by week

05AUG 11AUG (NJOURNAL, 18529,RADC:w)

NAME	CPU HRS	CON HR	% SYS
BAIR	.237	11.005	.356
BERGS	.004	.130	.006
BETHK	.059	4.758	.089
CAVAN	.746	6.294	1.122
IUORN	-	-	-
KENNE	.224	12.743	.337
LAMON	.216	4.291	.325
LAWRE	.051	2.625	.077
MCNAM	.116	6.042	.174
PANAR	.028	1.653	.042
RADC	.009	.676	.014
RZEPK	.028	1.763	.042
SLIWA	.019	.743	.029
STONE	.334	36.153	.502
THAYE	.006	.585	.009
TOMAI	.120	11.011	.180
(TOTAL)	2.197	100.472	3.304

RADC User Stats 15JUL73-26JAN74, by week

29JUL 04AUG (MJOURNAL, 18366,RADC:w)

NAME	CPU HRS	CON HR	% SYS
BAIR	.121	9.296	.214
BERGS	.010	.365	.018
BETHK	.194	12.039	.342
CAVAN	-	-	-
IUORN	.012	1.155	.021
KENNE	.098	5.319	.173
LAMON	.276	9.054	.487
LAWRE	.141	6.401	.249
MCNAM	.060	2.905	.106
PANAR	.016	1.819	.028
RADC	.016	1.975	.028
RZEPK	.048	2.868	.085
SLIWA	.002	.044	.004
STONE	.308	11.306	.544
THAYE	.008	.590	.014
TOMAI	.090	9.184	.159
(TOTAL)	1.400	74.320	2.472

RADC User Stats 15JUL73-26JAN74, by week

22JUL 28JUL (MJOURNAL, 18315,RADC:w)

NAME	CPU HRS	CON HR	% SYS
BAIR	.340	20.519	.440
BERGS	.016	.746	.021
BETHK	.160	10.723	.207
CAVAN	.138	10.644	.179
IUORN	.057	4.357	.074
KENNE	.141	7.181	.182
LAMON	.216	23.002	.279
LAWRE	.100	7.181	.129
MCNAM	.093	5.941	.120
PANAR	.104	3.886	.135
RADC	.011	.480	.014
RZEPK	.002	.196	.003
SLIWA	.002	.045	.003
STONE	.531	34.812	.687
THAYE	.038	1.556	.049
TOMAI	.192	14.085	.248
(TOTAL)	2.141	145.354	2.770

RADC User Stats 15JUL73-26JAN74, by week

15JUL 21JUL (LJOURNAL, 18075,RADC:w)

NAME	CPU HRS	CON HR	% SYS
BAIR	.234	17.135	.323
BERGS	.010	.779	.014
BETHK	.154	11.539	.213
CAVAN	.099	11.373	.137
IUORN	.038	5.078	.052
KENNE	.110	5.838	.152
LAMON	.400	35.927	.552
LAWRE	.050	10.981	.069
MCNAM	.163	9.909	.225
PANAR	.006	.638	.008
RADC	.036	3.677	.050
RZEPK	.020	1.794	.028
SLIWA	.002	.358	.003
STONE	.181	11.309	.250
THAYE	.020	7.964	.028
TOMAI	.033	2.117	.046
(TOTAL)	1.556	136.416	2.150

RADC User Stats 15JUL73-26JAN74, by week

(TOTAL)...weekly totals for RADC users, Grand totals and averages over the 24 week period. 26

NAME	CPU HRS	CON HRS	%SYS	
TOTAL	1.566	73.641	2.62	26a
TOTAL	.946	38.850	3.372	26b
TOTAL	1.811	104.958	2.710	26c
TOTAL	1.296	57.053	3.246	26d
TOTAL	.816	34.465	2.128	26e
TOTAL	1.706	81.462	3.468	26f
TOTAL	2.721	114.125	5.011	26g
TOTAL	3.475	147.619	5.430	26h
TOTAL	2.338	101.844	3.405	26i
TOTAL	2.132	92.214	4.292	26j
TOTAL	2.439	122.510	4.358	26k
TOTAL	2.538	138.116	4.275	26l
TOTAL	2.556	116.007	4.635	26m
TOTAL	2.517	121.968	3.690	26n
TOTAL	2.269	123.162	3.490	26o
TOTAL	2.160	115.198	4.028	26p
TOTAL	2.739	128.987	4.853	26q
TOTAL	2.301	139.319	4.153	26r
TOTAL	2.197	100.472	3.304	26s
TOTAL	1.400	74.320	2.472	26t
TOTAL	2.141	145.354	2.770	26u
TOTAL	1.556	136.416	2.150	26v
				26w

RADC User Stats 15JUL73-26JAN74, by week

(TOT)	45.620	2308.060	79.860	26x
(AVG)	1.983	100.350	3.472	26y

RADC User Stats 15JUL73-26JAN74, by week

(J30147) 26-FEB-74 14:28; Title: Author(s): Duane L. Stone/DLS;
Distribution: /EJK; Sub-Collections: RADC; Clerk: DLS;
Origin: <STONE>STATS.NLS;7, 26-FEB-74 14:25 DLS ;["BAIR"]; ["BETHK"];
["BERGS"]; ["CARRI"]; ["CAVAN"]; ["DAUGH"]; ["IUORN"]; ["KENNE"];
["LAFOR"]; ["LAMON"]; ["LAWRE"]; ["MCNAM"]; ["PANAR"]; ["RADC"];
["RZEPK"]; ["STONE"]; ["THAYE"]; ["TOMAI"]; ["WINGF"]; ["TOTAL"];

DLS 26-FEB-74 14:38 30148

RADC User Stats 15JUL73-26JAN74, by individual

20 pages..see me for hardcopy

RADC User Stats 15JUL73-26JAN74, by individual

(BAIR)				1
BAIR	.752	37.229	1.402	1a
BAIR	.564	27.842	.999	1b
BAIR	.420	43.498	.758	1c
BAIR	.237	11.005	.356	1d
BAIR	.121	9.296	.214	1e
BAIR	.340	20.519	.440	1f
BAIR	.234	17.135	.323	1g
(TOT)	2.668	166.524	4.492	1h
(AVG)	.116	7.240	.195	1i

RADC User Stats 15JUL73-26JAN74, by individual

(BERGS) 2

NAME	CPU HRS	CON HRS	%SYS	
BERGS	.154	5.876	.258	2a
BERGS	.004	.061	.014	2b
BERGS	.151	8.226	.226	2c
BERGS	.004	.059	.010	2d
BERGS	.040	1.312	.081	2e
BERGS	.174	7.039	.320	2f
BERGS	.343	17.814	.536	2g
BERGS	.210	7.019	.306	2h
BERGS	.226	9.652	.455	2i
BERGS	.069	4.542	.123	2j
BERGS	.060	2.812	.101	2k
BERGS	.204	8.374	.370	2l
BERGS	.026	1.496	.038	2m
BERGS	.396	28.643	.609	2n
BERGS	.250	17.397	.465	2o
BERGS	-	-	-	2p
BERGS	.050	1.758	.089	2q
BERGS	.072	12.242	.130	2r
BERGS	.004	.130	.006	2s
BERGS	.010	.365	.018	2t
BERGS	.016	.746	.021	2u
BERGS	.010	.779	.014	2v
(TOT)	2.473	136.342	4.190	2w

(AVG)	.108	5.928	.182	2y

RADC User Stats 15JUL73-26JAN74, by individual

(BETHK)				3
BETHK	.129	6.256	.217	3a
BETHK	.223	13.863	.327	3b
BETHK	.121	7.850	.186	3c
BETHK	.167	7.633	.311	3d
BETHK	.169	5.636	.315	3e
BETHK	.079	3.316	.140	3f
BETHK	.118	4.217	.213	3g
BETHK	.059	4.758	.089	3h
BETHK	.194	12.039	.342	3i
BETHK	.160	10.723	.207	3j
BETHK	.154	11.538	.213	3k
(TOT)	1.573	87.830	2.560	3l
(AVG)	.068	3.819	.111	3m

RADC User Stats 15JUL73-26JAN74, by individual

(CARRI) 4

NAME	CPU HRS	CON HRS	%SYS	
CARRI	.048	1.767	.081	4b
CARRI	.023	1.309	.082	4c
CARRI	.081	3.870	.121	4d
CARRI	.029	1.348	.073	4e
CARRI	.003	.048	.008	4f
CARRI	.120	5.224	.244	4g
CARRI	.090	4.734	.166	4h
CARRI	.054	2.182	.084	4i
CARRI	.170	7.478	.247	4j
CARRI	.219	11.885	.441	4k
(TOT)	.837	39.845	1.547	4l
(AVG)	.036	1.732	.067	4m

RADC User Stats 15JUL73-26JAN74, by individual

(CAVAN) 5

NAME	CPU HRS	CON HRS	%SYS	
CAVAN	.083	4.438	.139	5b
CAVAN	.074	4.942	.264	5c
CAVAN	.169	26.511	.253	5d
CAVAN	.122	5.794	.305	5e
CAVAN	.249	11.121	.649	5f
CAVAN	.234	11.053	.476	5g
CAVAN	.132	7.171	.243	5h
CAVAN	.308	20.616	.481	5i
CAVAN	.300	13.523	.437	5j
CAVAN	.044	1.866	.089	5k
CAVAN	.182	9.489	.325	5l
CAVAN	.145	8.297	.244	5m
CAVAN	.156	7.716	.283	5n
CAVAN	.320	13.344	.469	5o
CAVAN	.150	8.074	.231	5p
CAVAN	.204	25.876	.380	5q
CAVAN	.137	9.726	.255	5r
CAVAN	.281	16.021	.498	5s
CAVAN	.097	6.050	.175	5t
CAVAN	.746	6.294	1.122	5u
CAVAN	-	-	-	5v
CAVAN	.138	10.644	.179	5w
CAVAN	.099	11.373	.137	5x

RADC User Stats 15JUL73-26JAN74, by Individual

(TOT)	4.370	239.939	7.634	5y
(AVG)	.190	10.432	.332	5z

RADC User Stats 15JUL73-26JAN74, by individual

(DAUGH) 6

NAME	CPU HRS	CON HRS	%SYS	
DAUGH	.001	.015	.002	6a
DAUGH	.048	2.109	.072	6b
DAUGH	.034	1.732	.085	6c
DAUGH	.085	4.971	.173	6d
DAUGH	.069	3.937	.127	6e
DAUGH	.085	3.638	.133	6f
DAUGH	.149	9.539	.217	6g
DAUGH	.022	.718	.044	6h
DAUGH	.001	.008	.002	6i
(TOT)	.494	26.667	.855	6j
(AVG)	.021	1.159	.037	6k

RADC User Stats 15JUL73-26JAN74, by individual

(IUORN) 7

NAME	CPU HRS	CON HRS	%SYS	
IUORN	.033	1.867	.055	7b
IUORN	.012	.374	.043	7c
IUORN	.107	4.916	.160	7d
IUORN	.048	1.530	.120	7e
IUORN	.067	3.561	.136	7f
IUORN	.075	3.473	.138	7g
IUORN	.018	.405	.028	7h
IUORN	.026	.559	.038	7i
IUORN	.115	6.046	.232	7j
IUORN	.042	2.827	.075	7k
IUORN	.026	2.058	.044	7l
IUORN	.015	1.587	.027	7m
IUORN	.028	3.134	.041	7n
IUORN	.072	3.796	.111	7o
IUORN	.082	5.538	.153	7p
IUORN	.061	6.226	.114	7q
IUORN	-	-	-	7r
IUORN	.001	.030	.002	7s
IUORN	-	-	-	7t
IUORN	.012	1.155	.021	7u
IUORN	.057	4.357	.074	7v
IUORN	.038	5.078	.052	7w
(TOT)	.935	58.517	1.664	7x

(AVG)	.041	2.544	.072	7y

RADC User Stats 15JUL73-26JAN74, by individual

(KENNE) 8

NAME	CPU HRS	CON HRS	%SYS	
KENNE	.312	14.206	.524	8b
KENNE	.157	6.169	.560	8c
KENNE	.165	9.028	.247	8d
KENNE	.181	6.322	.453	8e
KENNE	.114	4.254	.297	8f
KENNE	.091	4.132	.185	8g
KENNE	.266	12.302	.490	8h
KENNE	.151	4.421	.236	8i
KENNE	.299	11.912	.435	8j
KENNE	.364	11.842	.733	8k
KENNE	.197	9.099	.352	8l
KENNE	.228	10.473	.384	8m
KENNE	.409	13.149	.742	8n
KENNE	.344	13.119	.504	8o
KENNE	.215	12.257	.331	8p
KENNE	.301	15.908	.560	8q
KENNE	.182	9.187	.339	8r
KENNE	.180	8.724	.319	8s
KENNE	.168	30.324	.303	8t
KENNE	.224	12.743	.337	8u
KENNE	.098	5.319	.173	8v
KENNE	.141	7.181	.182	8w
KENNE	.110	5.838	.152	8x

RADC User Stats 15JUL73-26JAN74, by individual

(TOT)	4.897	237.909	8.838	8y
(AVG)	.213	10.344	.384	8z

RADC User Stats 15JUL73-26JAN74, by individual

(LAFOR) 9

NAME	CPU HRS	CON HRS	%SYS	
LAFOR	.021	1.409	.035	9a
LAFOR	.026	1.121	.039	9b
LAFOR	.012	.660	.030	9c
LAFOR	.026	2.002	.053	9d
LAFOR	.033	1.606	.061	9e
LAFOR	.036	1.247	.056	9f
LAFOR	.059	1.817	.086	9g
LAFOR	.008	.495	.016	9h
LAFOR	.007	.180	.013	9i
(TOT)	.228	10.537	.389	9j
(AVG)	.010	.458	.017	9k

RADC User Stats 15JUL73-26JAN74, by individual

(LAMON) 10

NAME	CPU HRS	CON HRS	%SYS	
LAMON	.041	2.828	.069	10b
LAMON	.071	1.517	.253	10c
LAMON	.151	5.604	.226	10d
LAMON	-	-	-	10e
LAMON	.021	1.012	.031	10f
LAMON	.082	4.937	.165	10g
LAMON	.198	11.753	.354	10h
LAMON	.667	19.873	1.123	10i
LAMON	.740	18.669	1.342	10j
LAMON	.314	12.169	.460	10k
LAMON	.268	8.089	.412	10l
LAMON	.348	9.249	.648	10m
LAMON	-	-	-	10n
LAMON	-	-	-	10o
LAMON	.502	9.691	.906	10p
LAMON	.216	4.291	.325	10q
LAMON	.276	9.054	.487	10r
LAMON	.216	23.002	.279	10s
LAMON	.400	35.927	.552	10t
(TOT)	4.511	177.665	7.632	10u
(AVG)	.196	7.725	.332	10v

RADC User Stats 15JUL73-26JAN74, by individual

(LAWRE) 11

NAME	CPU HRS	CON HRS	%SYS	
LAWRE	.116	6.466	.195	11a
LAWRE	.122	4.664	.435	11b
LAWRE	.128	5.604	.192	11c
LAWRE	.018	1.665	.045	11d
LAWRE	.034	2.193	.089	11e
LAWRE	.121	3.982	.246	11f
LAWRE	.504	13.138	.928	11g
LAWRE	1.074	33.269	1.679	11h
LAWRE	.088	7.703	.128	11i
LAWRE	.277	7.336	.558	11j
LAWRE	.019	.932	.034	11k
LAWRE	.206	24.469	.347	11l
LAWRE	.132	9.686	.239	11m
LAWRE	.173	8.057	.254	11n
LAWRE	.164	16.888	.252	11o
LAWRE	.127	9.897	.236	11p
LAWRE	.165	8.607	.308	11q
LAWRE	.076	2.283	.135	11r
LAWRE	.076	4.069	.137	11s
LAWRE	.051	2.625	.077	11t
LAWRE	.141	6.401	.249	11u
LAWRE	.100	7.181	.129	11v
LAWRE	.050	10.981	.069	11w
				11x

RADC User Stats 15JUL73-26JAN74, by individual

(TOT)	3.962	198.096	6.961	11y
(AVG)	.172	8.613	.303	11z

RADC User Stats 15JUL73-26JAN74, by individual

(MCNAM) 12

NAME	CPU HRS	CON HRS	%SYS	
MCNAM	.017	1.004	.029	12b
MCNAM	.018	1.295	.064	12c
MCNAM	.030	2.463	.045	12d
MCNAM	.029	3.277	.073	12e
MCNAM	.027	1.334	.055	12f
MCNAM	.057	3.920	.105	12g
MCNAM	.043	3.247	.067	12h
MCNAM	.033	1.358	.048	12i
MCNAM	.008	.593	.016	12j
MCNAM	.170	12.636	.304	12k
MCNAM	.049	3.741	.083	12l
MCNAM	.062	4.769	.112	12m
MCNAM	.036	2.460	.053	12n
MCNAM	.130	6.201	.200	12o
MCNAM	.311	15.407	.579	12p
MCNAM	.084	4.123	.157	12q
MCNAM	.126	4.379	.223	12r
MCNAM	.059	4.189	.107	12s
MCNAM	.116	6.042	.174	12t
MCNAM	.060	2.905	.106	12u
MCNAM	.093	5.941	.120	12v
MCNAM	.163	9.909	.225	12w
(TOT)	1.721	101.193	2.945	12x

RADC User Stats 15JUL73-26JAN74, by individual

(AVG)	.075	4.400	.128	12y

RADC User Stats 15JUL73-26JAN74, by individual

(PANAR) 13

NAME	CPU HRS	CON HRS	%SYS	
PANAR	.056	1.569	.094	13b
PANAR	.122	5.912	.435	13c
PANAR	.276	12.698	.413	13d
PANAR	.278	11.211	.696	13e
PANAR	.158	6.602	.412	13f
PANAR	.130	7.987	.264	13g
PANAR	.220	7.793	.405	13h
PANAR	.379	19.764	.592	13i
PANAR	.368	13.768	.536	13j
PANAR	.101	5.111	.203	13k
PANAR	.177	5.890	.316	13l
PANAR	.191	12.504	.322	13m
PANAR	.206	11.472	.374	13n
PANAR	.124	6.024	.182	13o
PANAR	.193	9.006	.297	13p
PANAR	.279	14.633	.519	13q
PANAR	.112	5.959	.209	13r
PANAR	.483	23.465	.856	13s
PANAR	.056	2.863	.101	13t
PANAR	.028	1.653	.042	13u
PANAR	.016	1.819	.028	13v
PANAR	.104	3.886	.135	13w
PANAR	.006	.638	.008	13x

RADC User Stats 15JUL73-26JAN74, by individual

(TOT)	4.063	192.227	7.439	13y
(AVG)	.177	8.358	.323	13z

RADC User Stats 15JUL73-26JAN74, by individual

(RADC)				14
RADC	.002	.414	.004	14a
RADC	-	-	-	14b
RADC	.007	.180	.014	14c
RADC	.047	1.905	.084	14d
RADC	.059	2.043	.099	14e
RADC	.038	2.001	.056	14f
RADC	.038	2.001	.056	14g
RADC	.024	2.014	.045	14h
RADC	.042	1.953	.078	14i
RADC	.051	2.781	.090	14j
RADC	.008	.125	.014	14k
RADC	.009	.676	.014	14l
RADC	.016	1.975	.028	14m
RADC	.011	.480	.014	14n
RADC	.036	3.677	.050	14o
(TOT)	.388	22.235	.646	14p
(AVG)	.017	.967	.028	14q

RADC User Stats 15JUL73-26JAN74, by individual

(RZEPK) 15

NAME	CPU HRS	CON HRS	%SYS	
RZEPK	.213	12.002	.357	15b
RZEPK	.042	2.811	.150	15c
RZEPK	.021	.892	.053	15d
RZEPK	.002	.341	.004	15e
RZEPK	.019	1.198	.030	15f
RZEPK	.078	3.216	.114	15g
RZEPK	.159	10.207	.320	15h
RZEPK	.494	24.072	.882	15i
RZEPK	.371	25.305	.625	15j
RZEPK	.153	21.024	.278	15k
RZEPK	.155	11.607	.227	15l
RZEPK	.155	11.607	.227	15m
RZEPK	.032	2.709	.049	15n
RZEPK	-	-	-	15o
RZEPK	-	-	-	15p
RZEPK	-	-	-	15q
RZEPK	.028	1.763	.042	15r
RZEPK	.048	2.868	.085	15s
RZEPK	.002	.196	.003	15t
RZEPK	.020	1.794	.028	15u
(TOT)	1.992	133.612	3.474	15v
(AVG)	.087	5.809	.151	15w

RADC User Stats 15JUL73-26JAN74, by individual

(STONE) 16

NAME	CPU HRS	CON HRS	%SYS	
STONE	.386	16.675	.648	16a
STONE	.279	9.200	.994	16b
STONE	.372	16.767	.557	16c
STONE	.469	20.099	1.174	16d
STONE	.206	7.806	.537	16e
STONE	.483	22.608	.982	16f
STONE	.882	40.451	1.624	16g
STONE	.810	33.970	1.266	16h
STONE	.321	13.251	.467	16i
STONE	.329	13.989	.662	16j
STONE	.564	25.111	1.007	16k
STONE	.321	15.599	.541	16l
STONE	.301	8.960	.546	16m
STONE	.312	12.159	.457	16n
STONE	.450	16.117	.692	16o
STONE	.440	20.212	.819	16p
STONE	.283	14.766	.528	16q
STONE	.656	27.046	1.162	16r
STONE	.714	21.807	1.289	16s
STONE	.334	36.153	.502	16t
STONE	.308	11.306	.544	16u
STONE	.531	34.812	.687	16v
STONE	.181	11.309	.250	16w
				16x

RADC User Stats 15JUL73-26JAN74, by individual

(TOT)	9.932	450.173	17.935	16y
(AVG)	.432	19.573	.780	16z

RADC User Stats 15JUL73-26JAN74, by individual

(THAYE) 17

NAME	CPU HRS	CON HRS	%SYS	
THAYE	.022	.714	.037	17b
THAYE	.006	.107	.021	17c
THAYE	.072	4.661	.108	17d
THAYE	.024	.850	.060	17e
THAYE	.019	1.439	.050	17f
THAYE	.052	3.808	.106	17g
THAYE	.018	.692	.026	17h
THAYE	.024	.429	.048	17i
THAYE	.007	.306	.013	17j
THAYE	.022	1.887	.037	17k
THAYE	.014	1.030	.025	17l
THAYE	.161	7.025	.236	17m
THAYE	.011	.640	.017	17n
THAYE	.004	.215	.007	17o
THAYE	.030	1.792	.056	17p
THAYE	.034	1.590	.060	17q
THAYE	-	-	-	17r
THAYE	.006	.585	.009	17s
THAYE	.008	.590	.014	17t
THAYE	.038	1.556	.049	17u
THAYE	.020	7.964	.028	17v
(TOT)	.592	37.880	1.007	17w
(AVG)	.026	1.647	.044	17x

RADC User Stats 15JUL73-26JAN74, by individual

(TOMAI) 18

NAME	CPU HRS	CON HRS	%SYS	
TOMAI	.025	.847	.042	18a
TOMAI	.016	.489	.057	18b
TOMAI	.021	.511	.031	18c
TOMAI	.019	.738	.048	18d
TOMAI	.011	.329	.029	18e
TOMAI	.041	1.158	.083	18f
TOMAI	.126	3.899	.232	18g
TOMAI	.025	.572	.039	18h
TOMAI	.052	1.998	.076	18i
TOMAI	.065	2.557	.131	18j
TOMAI	.142	5.426	.254	18k
TOMAI	.064	2.799	.108	18l
TOMAI	.096	4.637	.174	18m
TOMAI	.070	1.902	.103	18n
TOMAI	.064	2.839	.098	18o
TOMAI	.229	12.683	.426	18p
TOMAI	.143	9.994	.267	18q
TOMAI	.154	9.627	.273	18r
TOMAI	.008	.158	.014	18s
TOMAI	.120	11.011	.180	18t
TOMAI	.090	9.184	.159	18u
TOMAI	.192	14.085	.248	18v
TOMAI	.033	2.117	.046	18w
				18x

RADC User Stats 15JUL73-26JAN74, by individual

(TOT)	1.806	99.560	3.118	18y
(AVG)	.079	4.329	.136	18z

RADC User Stats 15JUL73-26JAN74, by individual

(WINGF) 19

NAME	CPU HRS	CON HRS	%SYS	
WINGF	.038	1.958	.064	19b
WINGF	.003	.041	.004	19c
WINGF	.003	.056	.008	19d
WINGF	.018	.614	.047	19e
WINGF	.002	.095	.004	19f
WINGF	.004	.126	.007	19g
WINGF	.004	.102	.006	19h
(TOT)	.072	2.992	.140	19i
(AVG)	.003	.130	.006	19j

RADC User Stats 15JUL73-26JAN74, by individual

(TOTAL)...by individuals for 24 week period. 20

NAME	CPU HRS	CON HRS	%SYS	
				20a
(TOT)	2.668	166.524	4.492	20b
(TOT)	2.473	136.342	4.190	20c
(TOT)	1.573	87.830	2.560	20d
(TOT)	.837	39.845	1.547	20e
(TOT)	4.370	239.939	7.634	20f
(TOT)	.494	26.667	.855	20g
(TOT)	.935	58.517	1.664	20h
(TOT)	4.897	237.909	8.838	20i
(TOT)	.228	10.537	.389	20j
(TOT)	4.511	177.665	7.632	20k
(TOT)	3.962	198.096	6.961	20l
(TOT)	1.721	101.193	2.945	20m
(TOT)	.388	22.235	.646	20n
(TOT)	4.063	192.227	7.439	20o
(TOT)	1.992	133.612	3.474	20p
(TOT)	9.932	450.173	17.935	20q
(TOT)	.592	37.880	1.007	20r
(TOT)	1.806	99.560	3.118	20s
(TOT)	.072	2.992	.140	20t
				20u
(TOT)	47.514	2419.743	83.466	20v
(AVG)	2.501	127.355	4.393	20w

RADC User Stats 15JUL73-26JAN74, by individual

(CROSS) check...against weekly totals for RADC. 21

NAME	CPU HRS	CON HRS	%SYS	
TOTAL	1.566	73.641	2.62	21b
TOTAL	.946	38.850	3.372	21c
TOTAL	1.811	104.958	2.710	21d
TOTAL	1.296	57.053	3.246	21e
TOTAL	.816	34.465	2.128	21f
TOTAL	1.706	81.462	3.468	21g
TOTAL	2.721	114.125	5.011	21h
TOTAL	3.475	147.619	5.430	21i
TOTAL	2.338	101.844	3.405	21j
TOTAL	2.132	92.214	4.292	21k
TOTAL	2.439	122.510	4.358	21l
TOTAL	2.538	138.116	4.275	21m
TOTAL	2.556	116.007	4.635	21n
TOTAL	2.517	121.968	3.690	21o
TOTAL	2.269	123.162	3.490	21p
TOTAL	2.160	115.198	4.028	21q
TOTAL	2.739	128.987	4.853	21r
TOTAL	2.301	139.319	4.153	21s
TOTAL	2.197	100.472	3.304	21t
TOTAL	1.400	74.320	2.472	21u
TOTAL	2.141	145.354	2.770	21v
TOTAL	1.556	136.416	2.150	21w
(TOT)	45.620	2308.060	79.860	21x

(AVG)	1.983	100.350	3.472	21y

RADC User Stats 15JUL73-26JAN74, by individual

(J30148) 26-FEB-74 14:38; Title: Author(s): Duane L. Stone/DLS;
Distribution: /EJK; Sub-Collections: RADC; Clerk: DLS;
Origin: <STONE>INDIVSTATS.NLS;2, 26-FEB-74 14:35 DLS ;

DHC 26-FEB-74 15:23 30149

RJS to CCN
cc: Harslem at RAND-RCC, Ellison at UTAH-10
- - - -

I am trying to track down the source (in BLISS, I believe) to the Tenex CCN RJS-accessing program. Do either of you know where it currently is? Bill Plummer at BBN says they don't have it. 1

Thanks. Dave Crocker (DCROCKER at ISI, DHC at NIC Journal).
------- 2

DHC 26-FEB-74 15:23 30149

RJS to CCN
cc: Harslem at RAND-RCC, Ellison at UTAH-10
- - - -

(J30149) 26-FEB-74 15:23; Title: Author(s): David H. Crocker/DHC;
Distribution: /EFH CME; Sub-Collections: NIC; Clerk: DH;

GSG 26-FEB-74 15:40 30150

A DEMO MESSAGE TRY

THIS IS A DMO MESSAGE TO TRY TO GET TO KNOW THE JOURNAL SYSTEM AND HOW IT WORKS , HOPE I GET THIS ONE BACK. 1

GSG 26-FEB-74 15:40 30150

A DEMO MESSAGE TRY

(J30150) 26-FEB-74 15:40; Title: Author(s): Geoffrey S. Goodfellow/GSG; Distribution: /ARCG; Sub-Collections: NIC; Clerk: GSG;

Reminder & Info

Demonstration on common aspects of the ARPANET and the NLS - FOR Charles Strom and Comm people - Focal point - E. Kennedy. 1

Reminder & Info

(J30151) 27-FEB-74 06:48; Title: Author(s): Roberta J. Carrier/RJC;
Distribution: /RADC; Sub-Collections: NIC RADC; Clerk: RJC;

RJC 27-FEB-74 06:49 30152

REMINDER FOR FORM 2s

Form 2's (employee time expenditures) are due today. 1

REMINDER FOR FORM 2s

(J30152) 27-FEB-74 06:49; Title: Author(s): Roberta J. Carrier/RJC;
Distribution: /RADC; Sub-Collections: NIC RADC; Clerk: RJC;

CONNECTION.

HI DAVE, REMBER ME, GEFF GOODFELLOW, FROM ABOUT 6 MONTH AGO ON SRI-ARC? NOW I HAVE MY OWN USER NAME ON SRI-AI, I.E. (GEOFF@SRI-AI). DROP ME A LETTER SOMETIME, WHEN YOU HAVE A CHANCE. I'LL 1

CONNECTION.

(J30153) 27-FEB-74 11:05; Title: Author(s): Geoffrey S. Goodfellow/GSG; Distribution: /DKS; Sub-Collections: NIC; Clerk: GSG;

MIKE 27-FEB-74 12:25 30154

this iis in reference to your question on camera week

this is also a demo. for Phil M. (ah ha ! you don't know wo Phil M. is yet do you ?)

this iis in reference to your question on camera week

Camera Week 1

In order to meet the growing number of requests for "demonstrations" of Englebart or OFFICE-1, we feel that we had better prepare some sort of canned package for showng to sevearal different groups over some uncertain time period. 1a

The concept of a LIVE demo, or of a video-tape of a live demo spring naturally to mind, but the cold facts of the matter are that he stupid system doesn't lend itself to demonstrating (WHY ? Good qestion for further research - might tell us something about the system itself if we could answer it.), and further more, even if it were demonstratable (apologies to JHK), the physical demonstration of the system (wth all its tricks, short-cuts, etc.) would take away from the underlying concept of the system - its ability to permit different members of a knowledge community to share information to an extent never before possible. 1b

That last statement is a little bit long for a message of this type. 1b1

Consequently, we have decided to go the route followed by Gord Thompson in preparing a number ofslides which describe the concepts of intellect augmentation in visual, poetic terms, and accompany their presentation with an audio track (verbal plus musical, where appropriate.) 1c

I suggest we have a sort of a wide-open Camera Week at BPG, starting next week, if possible. 1d

Range of Slide Subject Matter 1e

classic situations in pre-augmented days 1e1

wasted paper, time, man-hours, dollars, etc. 1e1a

low level of communication within the group / between this and other groups 1e1b

trying to make one document serve several purposes/audiences 1e1c

conditions with OFFICE-1 (hopefully different) 1e2

typical workspace, examples of materials stored, examples of different types of interaction possible; 1e2a

it's important to realize that these "examples" of workspaces, etc., must be more than pictures of display

this iis in reference to your question on camera week

information; the information must be in a visual, poetic form if it is do more than the accompanying words or a LIVE demo of the system could do. le2al

Good luck with your photography, and thanks for your cooperation. (P.S. Since this presentation will be viewed by some very senior managers in the company, let's keep the pornography to a minimum.) lf

MIKE 27-FEB-74 12:25 30154

this iis in reference to your question on camera week

(J30154) 27-FEB-74 12:25; Title: Author(s): Michael T. Bedford/MIKE; Distribution: /JHK2 MIKE; Sub-Collections: NIC; Clerk: MIKE;

JSP 27-FEB-74 13:11 30155

Idea on ILLIAC

Dave: You might be interested in reading some thoughts I had on fostering experimental use of ILLIAC IV. They are contained in (illiacmemo,1:w). Regards, John 1

Idea on ILLIAC

(J30155) 27-FEB-74 13:11; Title: Author(s): John S. Perry/JSP;
Distribution: /DCR2 CF(fyi); Sub-Collections: NIC; Clerk: JSP;

JBP 28-FEB-74 06:09 30156

more on mail systems

buz:
for some interesting developments regarding mail take a look at the file at bbn in directory <documentation> named mailsys.specification.
thanks for your note.
--jon.

1

JBP 28-FEB-74 06:09 30156

more on mail systems

(J30156) 28-FEB-74 06:09; Title: Author(s): Jonathan B. Postel/JBP;
Distribution: /ADO; Sub-Collections: NIC; Clerk: JBP;

Phase I, Conceptual Desing Report, Delivery Schedule

20-DEC-73 1209-PST ENERGY at SRI-ARC: Message to Russell from Rodden
cc: CERL, engelbart at SRI-ARC
Received 20-DEC-73 12:09:16 1

Intensive discussions and planning sessions are taking place this weed at SRI-Menlo in connection with the DEIS project. Detailed plans covering general approach and staffing are being make. 1a

The scheduled project rewiew meeting at Menlo on 29 Jan is one of the items under discussion. At this time it would seem that there is no reason to ask for a delay in that meeting date. 1b

The Phase I conceptual design report is now in the final stages of review, rewrite and editing. We have found it difficult to select the proper terminal point for that report-planned as two volumes-since we are already into Phase II, detailed design. Getting the report out by 31 Dec is further complicated by reduced staff during the holiday period. 1c

Bob 1d

1e

RMR2 28-FEB-74 09:44 30157

Phase I, Conceptual Desing Report, Delivery Schedule

(J30157) 28-FEB-74 09:44; Title: Author(s): Robert M. Rodden/RMR2;
Distribution: /; Sub-Collections: NIC; Clerk: DVN;

DLS 28-FEB-74 11:22 30158

Comparison of RADC User Statistics for two 6 monthe periods

For those of you interested in how yyyou compare with others at RADC in use of NLS. % SYS column really has little meaning. To find out your weekly averages for any number, divide the number by 25 (or multiply by 4 and shift the decimal point 2 places to the left).

Comparison of RADC User Statistics for two 6 monthe periods

NAME	JUL 73-JAN 74 CPU HRS	JUL 73-JAN 74 CON HRS	JUL 73-JAN 74 %SYS	JAN 73-JUL 73 CPU HRS	JAN 73-JUL 73 CON HRS	JAN 73-JUL 73 %SYS
(BAIR)	2.668	166.524	4.492	7.833	456.471	16.594
(BERGS)	2.473	136.342	4.190	1.863	74.911	3.849
(BETHK)	1.573	87.830	2.560	0.733	44.362	1.630
(CARRI)	0.837	39.845	1.547			
(CAVAN)	4.370	239.939	7.634	1.353	96.445	3.115
(DAUGH)	0.494	26.667	0.855			
(IUORN)	0.935	58.517	1.664	1.121	63.739	2.489
(KENNE)	4.897	237.909	8.838	1.832	121.431	4.236
(LAFOR)	0.228	10.537	0.389			
(LAMON)	4.511	177.665	7.632	2.725	157.553	6.026
(LAWRE)	3.962	198.096	6.961	4.538	191.408	10.907
(MCNAM)	1.721	101.193	2.945	3.004	198.251	7.373
(PANAR)	4.063	192.227	7.439	1.640	68.853	3.413
(PETEL)				0.081	5.126	0.211
(RADC)	0.388	22.235	0.646	4.952	168.922	10.943
(RZEPK)	1.992	133.612	3.474	2.065	161.422	4.827
(SLWIA)				1.043	54.190	2.063
(STELL)				0.265	10.243	0.500
(STONE)	9.932	450.173	17.935	10.139	419.308	24.805
(THAYE)	0.592	37.880	1.007	0.058	3.129	0.121

Comparison of RADC User Statistics for two 6 monthe periods

(TOMAI)	1.806	99.560	3.118	0.427	25.411	0.865	26
(WINGF)	0.072	2.992	0.140				27
							28
(TOT)	47.514	2419.743	83.466	45.672	2321.175	103.967	29
							30
(AVG)	2.501	127.355	4.393	1.827	92.847	4.159	31
							32
(MEAN)	1.806	101.193	3.118	1.736	85.678	4.042	33

DLS 28-FEB-74 11:22 30158

Comparison of RADC User Statistics for two 6 monthe periods

(J30158) 28-FEB-74 11:22; Title: Author(s): Duane L. Stone/DLS;
Distribution: /RADC FEED(if you have any use for this...help yourself)
JHB(fyi); Sub-Collections: RADC; Clerk: DLS;

new syracuse univ contr.

28 Feb 74. The following are the tasks to be pursued under the Syracuse University Contract to start 1 June 1974. These tasks have been coordinated with the responsible Division engineer. The contract will run 32 months. 1

Parallel Processor 1a

Principal Investigator: Prof Feng 1a1

Task Engineer: J. Previte 1a2

Studies of general processing systems will be continued with emphasis on determining the effects of associative, parallel, pipeline and multiple processing on system architecture. 1a3

Studies will be made on the techniques for efficiently scheduling parallel/multiple processor systems. 1a4

New algorithms on sorting, network flow problems, air traffic control will be developed. Their associated hardware requirement will be specified. Arithmetic routines using mix modes will be developed. 1a5

Algorithms developed under previous contract for weather computation and air traffic control will be programmed on the RADCAP system (Rome Air Development Center Associative Processing system) with real-life data so that the system performance on these problems can be evaluated. 1a6

Simulation studies of various parallel procesor architectures will be continued. 1a7

The APL programming language will be implemented on the RADCAP system. 1a8

Level of effort: 150K/yr 1a9

Programming Languages 1b

Principal Investigator: Prof Reynolds 1b1

Task Engineer: R. Nelson 1b2

Level of effort: 25K 1b3

Investigations will be made on the new Lattice-Theoretic approach to the theory of computation, including its relation with Algebraic methods of program proving. 1b4

new syracuse univ contr.

Investigations will be conducted for the development of a complete but flexible type structure for programming languages which will permit polymorphic procedures and functions with circular type. 1b5

Investigations will be conducted for the development of an approach to assignment and shared data structures which will be compatible with general backtracking procedures, simple program proving methods, and hierachical storage allocation. 1b6

Investigate and study extensions to the methoodology of Structured Programming. 1b7

Modeling and Performance Evaluation of GDMS 1c

Principal Investigator: Prof. Goel 1c1

Task Engineer: Lt. Wingfield 1c2

Level of effort: 25K 1c3

Models will be developed, (analytically, by simulation or empirically), for obtaining performance measures of file organizations. Such models will give estimates of performance measures for given data (or descriptions of data),queries, and specifications of file organizations. 1c4

Using performance measures obtained from above paragraph, optimal file organizations will be derived or existing systems will be improved. 1c5

System Studies 1d

Principal Investigator: Prof. Sargeant 1d1

Task Engineer: R. Liuzzi 1d2

Level of effort: 25K 1d3

Study and investigate simulation modeling techniques for studying the behavior of computer subsystems such as operating systems, a programs, and utility programs and for systems utilizing computers such as in computer controlled information systems and networking of computers. 1d4

Study and investigate ways to make simulation modeling more efficient and investigate the utility of simulation languages such as Simscript II.5 and ECSS. 1d5

new syracuse univ contr.

Administration			1e
Mr. Ward			1e1
Overhead			1e2
Level of effort: 25K			1e3
Summary of level of effort per year			1f
Parallel Processor		150	1f1
Programming Languages	25		1f2
Modeling & Perform. GDMS	25		1f3
System Studies	25		1f4
Administration	25		1f5
Total	250		1f6

new syracuse univ contr.

(J30159) 28-FEB-74 13:19; Title: Author(s): Rocco F. Iuorno/RFI;
Distribution: /FJT ARB; Sub-Collections: NIC; Clerk: RFI;

FY-74

FY-74 contract dollars requirements 1

The following efforts to go in FY-74. Project 5550 has been allotted an additional 500k . Of this, ISI is receiving 170k or 180k. 1a

The following efforts will be transferred from Project 5581 to Project 5550 and will be funded in FY-75 by Project 5550. 1b

pr number	Title	fy-74	FY-75	FY-76	1c
B-4-3225	Semanol j73	30k	69k		1d
B-4-3233	compiler opt sty	10k	32k		1e
B-4-3229	Soft mod sty	30k	136k	136k	1f
b-4-3232	struct prog sys	80k	252,713k		1g

With program element 62702f funding 01r's in fy-75 we should make an increased effort to get the following items funded as new starts in fy-74. 1h

pr number	title	fy-74	fy-75	1i
b-4-3230	ext of harvard ecl	20k	50k	1j
b-4-3245	gcos invest(tpap)	10k	80k	1k
b-4-3247	gcos simscript mod	10k	85k	1l
b-4-3250	secure dms	15/17	68k	1m
b-4-3263	rugged prog envr	10k	80k	1n

b-4-3115 study of structured programming (isc) will be funded by project 5597. 1o

we removed $25,500 from univ of mich ,contract f30602-73-C-0001 and put $20,000 of this money on b-4-3230,the remainder of the money was put in project 5581. dick semeraro took $49,000 from a couple of his contracts and may not use all of the money. whatver is remaining will be given to project 5581, we can then probably start one or two more efforts in 5581, namely b-4-3245 gcos invst (tpap) and b-4-3247 gcos simscript mod in fy-74. 1p

roc is going to talk to maj. schell at esd and they are going to ask him if we can fund secure dms with project 5550 funds, we should know in one or two days if this is ok. 1q

FY-74

roc , ray liuzzi and myself talked to bob polocek and he said that with a minium of 10 k on each effort we can gat them stsrted sometime in april 1974. ive checked with flora seward in accounting and she will let me know how much money is left in proj 5581. if the 20 k is available then the efforts will go. roger also said there is a possibility that we can fund gcos invest (tpap) and gcos simscript from proj 55550. 1r

TJB2 1-MAR-74 08:00 30160

FY-74

(J30160) 1-MAR-74 08:00; Title: Author(s): Thomas J. Bucciero/TJB2;
Distribution: /RFI; Sub-Collections: NIC; Clerk: TJB2;

NJN 28-FEB-74 21:06 30162

My most humble apologies

I am sorry to report that the User Defintion Subcommittee document due Mar. 1 will not be ready on that day. I expect to have a good version of the document available for your comments by Monday Mar. 4. It will be available, of course, in NLS and in text form. For those who want to sneak an early peek, there will be an NLS version (only) in the <USING> directory called UDEF-REPORT --
(using,udef-report,1:w). I hope my apologies are accepted. Nancy 1

NJN 28-FEB-74 21:06 30162

My most humble apologies

(J30162) 28-FEB-74 21:06; Title: Author(s): Nancy J. Neigus/NJN;
Distribution: /USING; Sub-Collections: NIC USING; Clerk: NJN;

JOVIAL Manual--Chapt. 1

Edited original, with †&. font indications in them.

Chapter 1

INTRODUCTION

1.1 Purpose of the Manual

The purpose of this manual is to describe the 1973 version of the JOVIAL Computer Programming Language, and to establish standard language specifications upon which the acquisition of compilers for the language can be based. The JOVIAL 73 (abbreviated J73) language is to be considered a replacement for the previous standard, JOVIAL (J3), defined by AIR FORCE MANUAL AFM 100-24, dated 1967 June 15, with amendments thereto.

1.2 Scope and Changes

This manual contains the complete set of JOVIAL (J73) language features. The scope of these language features is designed to provide both effective support of today's processing requirements and evolutionary growth as future system requirements dictate. Implementation of the full J73 language is not intended at this time. A basic set of 3 language features is being identified for standard implementation by all compiler systems. Methods of extending the basic set of language features has not yet been determined. Existing J3 programs may not be completely converted to J73 language because of machine dependencies and resultant changes in language features. Conversion requirements and aids should be considered in conjunction with compiler acquisition for each replacement system. Using activities are requested to submit recommended changes, additions, and deletions to the manual in sufficient detail to permit both a technical and economic evaluation. AFR 300-10 prescribes both policy and procedures for using standard computer programming languages (i.e., COBOL< FORTRAN< JOVIAL) and for specifying computer programming language compilers.

1.3 Overview and Objectives of the Language

JOVIAL 73 has developed out of nineteen years of study and experience with regard to appropriate programming languages for command and control applications. JOVIAL has also been found to be well suited to the programming of many other applications including general scientific and engineering problems involving numeric computation and logically complex problems involving symbolic data. Because of its wide applicability and the optional control it provides over the details of storage allocation. JOVIAL is especially suitable for problems requiring an optimum balance between data storage and program execution time. The earliest versions of JOVIAL borrowed heavily from ALGOL 58. This latest version incorporates features permitting the design and utilization of the most sophisticated data

structures, yet at the same time simplifies the manipulation of elementary forms--the sort of manipulation that typically involves over 95% of computation time (Knuth, D.E., "Software, Practice and Experience", Vol. 1, pp. 105-133, 1971, John Wiley & Sons, Ltd.). 8

.1 The prime motivation for the development of JOVIAL is the desire to have a common, powerful, easily understandable, and mechanically translatable programming language, suitable for wide-range applications. Such a language must be relatively machine independent, with a power of expression in logical operations and symbol manipulation as well as numerical computation. A JOVIAL †program:declaration describes a particular solution to a data processing problem, meant to be incorporated by translation into a machine language program. The two main elements of this description are: 8a

a. A set of †data:declarations, describing the data to be processed. 8a1

b. A set of †statements, describing the algorithms or processing rules. These two sets of descriptions are, to a great extent, mutually independent, so that changes in one do not necessarily entail changes in the other. Further, the pertinent characteristics of an element of data need be declared only once and do not have to be repetitiously included with each reference to the data. 8a2

.2 One of the further requisites of a programming language intended for large-scale data processing systems is that it include the capability of designating and manipulating system data, as contained in a communication pool (compool). A compool serves as a central source of data description, communication changes in data design by supplying the compiler (or assembler) with the current data description parameters, thus allowing automatic modification of references to changed data in the machine language program. Though highly desireable for any data processing system, a compool is a vital necessity for large-scale systems where problems of data design coordination between programmers are apt to be otherwise unsolvable. 8b

.3 JOVIAL is a readable and concise programming language, using self-explanatory English words and the familiar notations of algebra and logic. In addition, JOVIAL has no format restrictions and, with the ability to intermix †comments among the †symbols of a program and to define notational additions to the language, the only limit to expressiveness is the ingenuity of the programmer. A JOVIAL program may thus serve largely as its own documentation, facilitating easy maintenance and revision by programmers other than the original author. 8c

.4 The convenient subordination of detail without loss of detail afforded by JOVIAL also contributes to readability and expedites the task of uniting programs. One simple JOVIAL †statement can result in the generation of scores of machine instructions which might normally take hours to code in a machine-oriented language. This reduction in source program size proportionally reduces the opportunity for purely typographical errors which are much more obvious when they do occur, due to JOVIAL's readability. Since many coding errors based on the idiosyncrasies of computer operations are eliminated, experience has shown that JOVIAL programs may be written and tested, even by neophyte programmers, in less time than previously required with machine-oriented programming languages. 8d

.5 Computer users are often faced with the necessity of producing large numbers of computer programs in short periods of time. A readable language such as JOVIAL alleviates the heavy burden this places on the existing programming staff, by permitting an augmentation with relatively inexperienced programmers. 8e

.6 JOVIAL simplifies and expedites the related problems of training personnel in the design of data processing systems and the development of computer programs for such systems. Although JOVIAL was designed primarily as a tool for professional programmers, its readability makes it easy for nonprogrammers to learn and use. It also helps to broaden the base of JOVIAL users beyond those engaged in actual programming. 8f

.7 The objectives of standardizing JOVIAL are as follows: 8g

a. To attain a greater degree of inter-system compatibility. 8g1

b. To provide a clear guidance to the computer manufacturing community in the production of computer-based systems. 8g2

c. To use existing programs and ease the transition when upgrading to new computers. 8g3

d. To improve the productivity of programmers. 8g4

e. To establish a base for language improvement. 8g5

f. To establish a training requirement on which to base a comprehensive skill resource development program. 8g6

1.4 The Descriptive Metalanguage for JOVIAL 9

One purpose of this manual is to specify a language. The purpose of the language is to specify algorithmic processes for the solution of

computational problems. We must carefully distinguish between the elements of the JOVIAL language and other objects, including the objects a JOVIAL †program:declaration discusses. ←A, ←B, ←C, ←B+C, and ←A=B+C are five structures in the JOVIAL language. There are, however, an infinite number of structures in the JOVIAL language. In order to speak about them all we need to classify them. We give names to the classes of JOVIAL structures and we distinguish them from all other objects by writing them in italics. The classification scheme and the names of classes used in this manual are arbitrary. JOVIAL 73 can be validly described using other classification schemata and/or class names. 10

.1 Every class of structures in the JOVIAL language that we discuss in this document is named by a word in italics or by a phrase in italics with colons (in italics) between the words of the phrase. We do not distinguish between a class and a general element of the class. We use plurals in italics when we mean several elements of the class. Italics are used for no other purpose except also to number the syntax equations in Appendix A. Thus, †letter is a class (having 26 members) of elements of JOVIAL. A †letter is also a member of that class. †Name is a class (having infinitely many members) of elements of JOVIAL. A †name is also a member of that class. We use the phrase "metalinguistic term" to mean one of these italicized words or phrases. Every metalinguistic term (except †system:dependent:character) is defined in terms of other metalinguistic terms and the 59 elements of the JOVIAL alphabet. By substitution, every metalinguistic term is ultimately defined in terms of the 59 elements of the JOVIAL alphabet (and †system:dependent:character). 10a

.2 The definition of a metalinguistic term is called a "syntax equation" or a "metalinguistic equation". Several notational devices are needed in constructing syntax equations. The syntax equations occur throughout the document and are all gathered together in Appendix A in alphabetical order. In fact, Appendix A may be considered the syntactic specification of JOVIAL 73. In Appendix A, each heavily black-bordered box (except one) contains the definition of a single metalinguistic term. Each syntax equation is preceded, in its box, with a sequential number in italics, followed by a colon, followed by a list of the numbers of the syntax equations in which this metalinguistic term is part of the definition. 10b

.3 Following the metalinguistic term being defined is the definitional operator: 10c

::= 10d

Following the definitional operator is the definition, consisting of elements of the JOVIAL alphabet (the †signs of JOVIAL), metalinguistic terms, and metalinguistic symbols indicating choice, repetition, and continuation. Many definitions contain optional elements or mandatory choices. Braces ordinarily denote a choice. One line must be selected from among the lines within the braces in order to satisfy the definition. If there is only one line within the braces, it must be chosen--the braces then only indicate the extent of application of a repetition operator. 10e

Brackets denote an option or an option and a choice. The line within the brackets may be included or omitted. If there is more than one line within brackets, zero or one of the lines within may be used to satisfy the definition. †Brackets are elements of the JOVIAL alphabet, all of the same size. Brackets are distinguished from †brackets by being considerably larger (and of various sizes). Arrows are used to indicate continuation of a line. If a line is too long for the page (or the space available within braces or brackets) an arrow is plaed at the right of the first part of the line and is repeated at the left of the continuation line. In one or two places vertical arrows are used for similar purposes where a column (a stack of lines within braces) is too long for the page. There are two repetition symbols. means that the preceding element of the definition may be repeated an arbitrary number of times. means also that the preceding element may be repeated, but that †commas must be inserted between occurrences of the repeated element. If the repetition symbol follows a metalinguistic term, it is that one metalinguistic term that may be repeated. If the repetition symbol follows a right bracket or a right brace, it is the entire structure within the brackets or braces that may be repeated. A bracketed structure followed by a repetition symbol means "use this structure zero or more times, choosing any one of the lines herein, independently, for each occurrence." A braced structure followed by a repetition symbol means the same except that "zero or more times" becomes "one or more times." 10f

.4 There is no terminator symbol for a syntactic equation. One ends where another begins or where there is nothing left in the box. In a few of the boxes there are some anomalies. Syntactic equation 144 defines †mark. Opposite each †mark is a metalinguistic term. This association serves to define each of these metalinguistic terms, as the †mark to its left. Opposite †space is only space. That's the definition of †space, the †mark indicated by not marking the paper. Syntactic equation 172 defines †pattern:digit. It also gives tabular information involved with the significance of †pattern:digits. Syntactic equation 190 defines †relational:operator and gives a phrase for

each †relational:operator indicating its meaning. Box 234 defines †system:dependent:character by means of a prose discussion. Syntactic equations 247 and 248 are in one box. Each is a definition of †variable in terms of different collections of covering sets. And equations 84 and 85, for †format:list, are in one box. 10g

.5 Leading and trailing spaces in the definition of a metalinguistic term are of no significance. Spaces between the †symbols of a definition may or may not be significant; the body of this manual clarifies the issues. Certainly, if there is no space between elements of the definition, then no †space is permitted in the corresponding positions in a †program:declaration. For example, ←BEGIN must not be rendered as ←B ←E ←G ←I ←N or as ←BE ←GIN. 10h

.6 The syntax equations are not completely correct. There are actually limitations on the seeming generality of the syntax equations. The limitations that must be observed to maintain syntactic integrity are stated in the text. In addition, the text tells what the programmer can do with the syntax and explains the meanings of all JOVIAL constructs. 10i

1.5 JOVIAL Characters, Examples 11

Anything in a syntax equation that is not in italics is composed of JOVIAL †signs, the actual alphabet used to write a †program:declaration. These †signs (and †system:dependent:characters) are used also in examples illustrating what may be written in substitution for a metalinguistic term. Examples and metalinguistic terms are never hyphenated for the sake of composing the type in this document. A metalinguistic term never continues from one line to the next in a syntax equation. In text, however, a multiword metalinguistic term may start on one line and continue on the next. In this situation, the italicized colon at the end of one line is repeated at the beginning of the next line. †Colon happens to be one of the JOVIAL †signs. The JOVIAL †colon is not in italics and is always separated by at least one space from any italicized word. The metalinguistic colon is closely pressed on both sides by words in italics. 12

.1 Metalinguistic terms (the words and phrases in italics) represent structures that can be understood and translated by a JOVIAL compiler, or at least they represent elements of such structures. A †program:declaration can be understood by a compiler and translated into computer instructions. †Simple:statements and †table:declarations are elements of †program:declarations. The translated version of a †program:declaration and the structures it manipulates, however,

are an entirely different class of objects. The collection of computer instructions is known as a "program." The word is not in italics because the thing it represents does not exist in JOVIAL. JOVIAL can contain †program:declarations; it cannot contain programs. In a similar manner, a †table:declaration, upon being processed by a compiler, gives rise to a structure, known as a "table", to be manipulated by a program. 12a

.2 †Program:declaration and †table:declaration are distinguished from program and table both by the use of different type fonts and the use of the word "†declaration." With many terms, the distinction is only made by means of type fonts because the use of extra words would make the explanations awkward. For example, a †variable is part of a †program:declaration, whereas a variable is a value that can be set, used and changed by a program at different times. 12b

1.6 Notational Symbols, System-Dependent Values 13

In various parts of this manual, various numeric values that may change from time to time or that are system dependent are represented by letters or character combinations after the manner of algebraic notation. The meanings of these notational symbols are given where they are used. They have no pervasive meaning and are to be considered valid only in the local context where they are used. 14

.1 Knowledge of many of the system-dependent values is vital to a sufficient understanding of the environment to enable the programmer to construct valid and useful †program:declarations. Such information is not available at this writing and is not appropriate to this manual. This information must be made available in other documentation. 14a

1.7 One-Dimensional Nature of a Program 15

Regardless of the forms used for coding, the input medium, or the arrangement of the coding on that medium, the language definition considers a JOVIAL †program:declaration to be a continuous stream of JOVIAL †signs. 16

1.8 Syntax and Semantics--Illegal, Undefined, Ungrammatical 17

This manual gives complete specifications for writing legitimate JOVIAL †program:declarations, except for the necessary system-dependent values and compiler capacities, explains in detail how the particular compiler deviates from these specifications, and lists and explains all error messages that the compiler may generate. 18

.1 For a †program:declaration to be legitimate, it must be

meaningfully structured in accordance with the specifications in this manual. If the †program:declaration or any part of it fails to meet this requirements, it is of small concern whether it is called illegal, undefined, or ungrammatical. 18a

.2 It often happens that compilers do not reject certain illegal or undefined structures, but compile them instead, giving results that the programmer considers appropriate. It is recommended that programmers avoid exploiting these quirks, since there is no guarantee that a new version of the compiler will exhibit the same eccentricities. Using such discovered idiosyncrasies leads to extra work in reprogramming when transferring the work to another computer or when an updated compiler replaces the old one. 18b

.3 As part of the structure of a JOVIAL †program:declaration, nothing is permitted by unstated implication. If it is not prescribed by this manual (or other documentation in the case of system-dependent features), it is not legitimate JOVIAL code. In the matter of exceptions to prescribed forms, nothing is prohibited by innuendo. All exceptions are explicitly stated. 18c

.4 The document is to be taken as a unit. All sections, all figures, the list of syntax equations, and the index-glossary are interrelated. 18d

JOVIAL Manual--Chapt. 1

(J30164) 2-MAR-74 07:31; Title: Author(s): Duane L. Stone/DLS;
Distribution: /RJC; Sub-Collections: RADC; Clerk: DLS;
Origin: <PETELL>C1.NLS;3, 2-MAR-74 07:27 DLS ;

ARCG 2-MAR-74 10:59 30165

Forgetfulness

I have an account N980JL02 at CMU, with mail box

Forgetfulness

1. I am having interesting arguments with Pat Hayes about semantics of Planeer/Conniver type programs. We think it could be fruitful to have an IFIP working conference on this in the next year or so and I shall be talking to Zamenek about this in due course. I hope we would have your support that this is a good idea.
2. Audrey is now in teacher training and has high up contacts in inner London Education Authority etc. We both want to try to sell them LOGO ideas and would appreciate more documentation, especially a few copies of Seymour's NSF proposal. Letter follows .. Love to Gloria and all John Laski

1

Forgetfulness

(J30165) 2-MAR-74 10:59; Title: Author(s): Guest C. ARC/ARCG;
Distribution: /MM3; Sub-Collections: SRI-ARC; Clerk: ARCG;

JOVIAL Manual, Chapter 2

Includes † 8 - font markers.

Chapter 2 1

ELEMENTS 2

2.1 Introduction 3

A †program:declaration written in JOVIAL consists, basically, of †statements and †declarations. The †statements specify the computations to be performed with arbitrarily named data. †Simple:statements can be grouped together into †compound:statements in order to help in specifying the order of computations. Among the †declarations are †data:declarations and †processing:declarations. The †data:declarations name and describe the data on which the program is to operate, including inputs, intermediate results, and final results. The †processing:declarations generally contain †statements and other †declarations. They specify computations, but they differ from †statements in that the computations must be performed only when the particular †processing:declaration is specifically invoked by †name. In addition to †statements and †declarations, there are †directives which serve various purposes. They designate externally defined †names the compiler is expected to recognize, they control selective compilation of various †statements and †declarations, and they provide information the compiler needs in order to optimize the object code. The †statements, †declarations, and †directives are composed of †symbols, which are the words of the JOVIAL language. These †symbols are, in turn, composed of the †signs that constitute the JOVIAL alphabet. 4

.1 The general order in which the elements of a †program:declaration are introduced in the preceding paragraph represents the general order in which one looks up definitions when trying to clear up a question. The definitions in this manual are introduced, however, in the opposite order. Such arrangements lead to complaints that one must "read the book backwards." This comment arises from the process of looking up a form in the table of contents, turning then to the late chapter where it is defined in terms of earlier defined forms. These, more elementary, forms are then found, via the table of contents, in an earlier chapter. And so forth. Nevertheless, the document is arranged for the use of a reader rather than for reference. Difficult as this may be for reference use, the opposite arrangement is much more difficult for a reader. 4a

.2 An index-glossary is included which facilitates reference. The index-glossary answers many questions directly. In other cases, it references syntax equations and sections by number. 4b

2.2 Spaces and †Spaces 5

It is important to distinguish between a †space, an element of JOVIAL, and a space, an element of our descriptive language. JOVIAL is written using †symbols, the words of the language. The †symbols are composed of †signs, the elements of the JOVIAL alphabet. In general, †symbols do not contain †spaces. The exceptions are pointed out in Section 2.5.2, with respect to †comment, and in Section 2.8.2, with respect to †character:constraints. In general, †symbols are separated by †spaces. Again the exceptions are noted in Section 2.10; however, these exceptions are permissive; i.e., it is always correct to put †spaces between †symbols. 6

.1 The following example is wrong: 6a

←PLXMPY (1. 375, -. 75, 5 ., 7.3 : REAL, IMAG) ; 6a1

.2 The following examples are right: 6b

a. ←BEGIN 1, 3, +5, - 7 END 6b1

b. ←SL:PLXMPY(1.375,-.75,5.,7.3:REAL,IMAG); 6b2

c. ←SL : PLXMPY (1.375 , - .75 , 5. , 7.3 : REAL , IMAG) ; 6b3

.3 In defining and explaining †signs and †symbols, any spaces included in the metalanguage formulas are not meant to be included in the definition. The phrase "string of" implies that there are to be no †spaces between the elements strung together. Similarly, phrases such as "followed by", "enclosed in", and "separated by", imply that there are to be no †spaces between the elements concerned. This is the situation (except where explicitly stated to be different) in this chapter, Chapter 2. In Chapter 3 and beyond, the opposite view is maintained with respect to these phrases. 6c

2.3 †Signs, Elements of the JOVIAL Alphabet 7

.1 †Sign means a †letter, a †numeral or a †mark. †Letter means one of the 26 letters of the English alphabet, written in the form of a roman capital. †Numeral means one of the ten arabic numerals: ←0, ←1, ←2, ←3, ←4, ←5, ←6, ←7, ←8 or ←9. (The slash through the zero is only for the purpose of distinguishing it from the †letter O in definitions and examples of JOVIAL.) †Sign, †letter, and †numeral are defined more formally by means of the syntax equations in the boxes at the head of this section. †Mark is most easily defined by the formal means of the syntax equation in the box above. The box above also contains a metalinguistic term associated with each †mark; this serves to define these terms. 7a

2.4 †Symbols, The Words of JOVIAL 8

.1 The †symbols or words of the JOVIAL language are composed of strings of †signs, in some cases a single †sign. Most †symbols do not contain †spaces. In fact, †spaces serve to separate †symbols from one another. 8a

2.5 †PRIMITIVE, †Ideogram, †Directive:Key, †Comment 9

.1 †Primitives may be considered the key words of the JOVIAL language. They are generally used to give the primary meaning of a †statement or †declaration, although some are used for second purposes. †Ideograms are generally used as †arithmetic:operators, as †relational:operators, and for purposes such as grouping, separating, and terminating. †Directive:keys are used to state the primary meanings of †directives. †Comments can be used to annotate a †program:declaration; explaining to readers (and often the original programmer) what is going on. 9a

.2 Notice that a †comment is delimited by †quotation:marks. Therefore, †spaces are permitted within a †comment, but a †quotation:mark is not permitted within a †comment. Also, a †semicolon is not permitted within a †comment. The reason for this is to permit some recovery in case a delimiting †quotation:mark is left off a †comment. If the †comment were not then terminated by the next †semicolon, the entire remainder of the †program:declaration would be turned inside out; the †comments being interchanged with the †statements and †declarations. Even with this rule, failure to terminate a †comment can lead to disaster. If an END is swallowed up, the entire program structure can be disarrayed. 9b

.3 The †system:dependent:characters that can be included in †comments (and other structures) are simply those †characters, other than JOVIAL †signs, that the particular system and compiler can read and write. 9c

.4 Notice that †primitives, †ideograms, and †directive:keys do not contain †spaces. †Spaces are significant in a †program:declaration; usually in that they separate †symbols. †Comments, on the other hand, may contain †spaces. This permits easier reading and writing of the commentary. The †quotation:marks delimiting the †comment provide the necessary grouping so that the †spaces do not cause trouble. 9d

2.6 †Abbreviation, †Letter:Control:Variable, †Name 10

.1 †Abbreviations are specific †letters having specific meanings in specific contexts, usually †data:declarations. The specific

uses are documented later on without, usually, calling the †letter an †abbreviation. 10a

.2 The †letter:control:variable is a special †variable having meaning only within a †loop:statement and passing out of existence when the †loop:statement is not being executed. It is explained more fully in connection with explanation of the †loop:statement. 10b

.3 Regardless of the syntax in the box above, a †name must not be the same as any †primitive. Notice that a †name must include at least two †signs. The use of the †dollar:sign is system dependent. That is, it provides a means whereby a †name can be designated to have some special meaning in relation to the system in which the compiler is embedded. Such special meanings are outside the scope of this manual, however, and †names containing †dollar:signs are considered the same as other †names herein. †Names do not contain †spaces. An embedded †space would change a †name into two †names or other †symbols. 10c

2.7 †Number, †Constant, †Status 11

.1 The above definitions are obviously not complete, in that several kinds of †constants mentioned in the box are not yet defined. This discussion is mainly concerned with the use of †spaces together with †numbers, †constants, and †statuses as †symbols. 11a

.2 A †number is a string of †numerals, without †spaces. In some places, a †number can stand alone as a †constant. In other places, particularly †data:declarations, it stands alone as a †symbol but is not considered a †constant. In yet other places, a †number is part of another †symbol. A case in point is the †character:constant, defined above. The optional †count in a †character:constant is a †number. (In several places, †numbers or other constructs are given new names reminiscent of their uses in those places.) 11b

.3 A †character:constant is a †symbol. If it begins with a †count, there must be no †spaces between the †count and the first †prime. Between the †primes, the string of †characters may include †spaces, but these †spaces are significant. They represent part of the value represented by the †character:constant. (There are restrictions on the †characters permitted in a †character:constant, discussed in Section 2.8.2). In a †status:constant and a †qualified:status:constant, the †left:parenthesis, the †name, the †colon, the †status, and the †right:parenthesis are all †symbols. †Spaces are permitted between these elements, but not within the †name or the †status.

†Space is not pemitted between ←V and the †left:parenthesis. All other †constants are †symbols, not containing †spaces. 11c

2.8 †Constants and Values 12

.1 †Character:constants are the means of representing character values to be manipulated by a program. (†Character:variables and †character:formulas are indirect means.) The †characters acceptable as character values are whatever the system will accept from among those given in the body of Figure 2-1. At least the 59 JOVIAL †signs must be accepted. Comparison of Figure 2-1 with Section 2 of USAS X3.4-1968, "USA Standard Code for Information Interchange", shows the graphic characters in identical positions in the two tables. Figure 2-1 includes eight additional columns presently under consideration by standardization bodies. The positions of the †characters in the table are the only correspondence. This manual does not require that internal representation be in accordance with USAS X3.4-1968. If, however, JOVIAL †program:declarations generate messages for transmission to other systems or process messages received from other systems, these messages are required by other directives to conform to USAS X3.4-1968 in their external representation. 12a

.2 All of the character values indicated in the body of Figure 2-1 can be represented in †character:constants (except for system-dependent limitations). Artifices are required, however, to represent some of the values. Any †spaces within the delimiting †primes, except within a three-†character code, represent characters of value "space". †Primes, †semicolons, and †dollar:signs have special meanings. Therefore, in order to represent a single occurrence of one of these †signs, two of them are used in succession. If a succession of these †signs is desired as part of the value represented by a †character:constant, the entire string is doubled. In summary: 12b

←2n †primes are used to represent ←n †primes. 12b1

←2n †semicolons are used to represent ←n †semicolons. 12b2

←2n †dollar:signs are used to represent ←n †dollar:signs. 12b3

.3 The reason for doubling the †primes inside a †character:constant is that single †prime terminates the †constant. The reason for doubling †semicolons inside a †character:constant is the same. Although it is illegal, a single †semicolon terminates a †character:constant; and for the same reason it terminates a †comment, to avoid turning the whole †program:declaration inside out if the correct terminator is omitted. The reason for doubling †dollar:signs is that a single

↑dollar:sign introduces the codes described in the next two paragraphs. 12c

.4 Any ↑character represented in the body of Figure 2-1, if it is acceptable at all by the system as a character value, may be represented by a three ↑character code beginning with a ↑dollar:sign. The second ↑character is a column code from the figure; i.e., any ↑numeral or one of the ↑letters from ↓A through ↓F. The third ↑character is any ↑character from the body of the figure that can be recognized by the compiler. The character specified by such a code is the one at the intersection of the column designated by the column code and the row in which the third ↑character is found. For example, the percent mark can be represented by any of several three ↑character codes, including these two: 12d

↓$25 12d1

↓$2U 12d2

.5 Within a ↑character:constant, there is a recognition mode for ↑letters. Initially, the mode is "general", in which all ↑characters, including uppercase and lowercase ↑letters, and the three-↑character codes are recognized as described above. The mode can be changed to "lowercase", however, by including the two-↑character mode code consisting of ↑dollar:sign followed by uppercase or lowercase ↓L. All ↑letters following such a mode code in a ↑character:constant, regardless of the case used, are considered to be in lowercase. The two-↑character mode consisting of ↑dollar:sign followed by uppercase or lowercase ↓U sets the "uppercase" mode, in which all ↑letters are considered uppercase. The three-↑character codes pevail, without changing the mode, regardless of the mode. Hence, the appropriate case can be specified for one ↑letter in a stream of ↑letters. For example, here are four ↑character:constants with the value "De Gaulle": 12e

↓'De Gaulle' 12e1

↓'D$6E G$6A$7U$6L$6L$6E' 12e2

↓'D$LE $4GAULLE' 12e3

↓'udle$u g$laulle' (none of these are ones) 12e4

.6 If the ↑count is present in a ↑character:constant, there must be no ↑spaces between the ↑count and the first ↑prime, and the ↑count gives the number of concatenated repetitions of the character values represented within the ↑primes. Examples: 12f

↓2'TOM' is equivalent to ↓'TOMTOM' 12f1

↓10'*' is equivalent to ↓'**********' 12f2

↓3' ' is equivalent to ↓' ' 12f3

.7 Notice that it is indeed the values that are repeated, not the †characters making up the †constant before evaluation. Thus, ↓2'T$LOM' is equivalent to ↓'TomTom'; it is not equivalent to ↓'Tomtom'. 12g

.8 The system may impose a limit on the number of characters in strings representable by †character:constants, †character:variables, or †character:formulas. The size of a †character:constant is the number of characters represented in the value; not the number of †characters between the †primes. 12h

.9 †Pattern:constants directly represent values consisting of strings of bits. (Various †variables and †formulas also represent bit values.) The †numeral to the left of the ↓B in the †pattern:constant is the "order" of the †constant and controls the possible †pattern:digits and affects their meanings. These relationships are displayed in the box above wherein †pattern:digit is defined. The right column contains the possible orders. The †pattern:digits are displayed in the center in braces. The permissible †pattern:digits are only those on the line with or above the selected order. For example, if the pattern is of order ↓4, only ↓F and the 15 †pattern:digits above ↓F are permitted as part of this particular †pattern:constant. The meaning of each †pattern:digit is given in the column on the left, but these are also affected by the order. If the order is ↓n, then the ↓n rightmost bits of each pattern represent the meanings of the corresponding †pattern:digits. The optional †count gives the number of concatenated repetitions of the †pattern:digits enclosed in †primes. No †spaces are permitted anywhere within this structure. 12i

.10 The meaning of a †pattern:constant is the string of bits resulting from the concatenation of the strings of bits (as modified by the order) represented by each †pattern:digit. The size of the †pattern:constant is the number of bits in the string and may be obtained by multiplying the order times the †count (assumed to be ↓1 if not specified) times the number of †characters inside the †primes. In the following examples, a †pattern:constant on the left is shown with the bit string it represents on the right: 12j

↓4B'7CF03' 01111100111100000011 12j1

←3B'3120'	011001010000	12j2
←1B6'10'	101010101010	12j3
←5B2'R'	1101111011	12j4

.11 †Numeric:constants represent numeric values. (There are also †numeric:variables and †numeric:formulas.) †Numeric:constants, as well as †numeric:variables and †numeric:formulas, are described in terms of their three possible modes of representation; as integer values, fixed values, and floating values. The compiler may represent constants in modes other than those indicated by the †program:declaration; as long as the overall effect of the †program:declaration is not compromised. (This principle applies in general; i.e., the compiler can do things differently as long as the result is the same.) Suppose, for example, an †integer:constant is used in a context that requires it to be converted to a floating value. It is far more efficient for that conversion to be done once, at compile time, instead of each time the code executed 12k

.12 An integer value is a numeric value represented as a whole number without a fractional part, but treated as if it had a fractional part with value zero to infinite precision. In this manual, precision means the number of bits to the right of the point in binary representations of numeric values. A †number used as an †integer:constant represents an unsigned integer value. The size of an †integer:constant is the number of bits needed to represent the value; from the leading one bit to the units position, inclusive (value zero has size 1). No †spaces are permitted in an †integer:constant. The system may impose a limit on sizes of integer values. 12l

.13 Floating values ←v are represented within the computer by three parts, the significand ←s, the radix ←r, and the exrad ←e, having the following relationships (with regard to the absolute value): 12m

←v = s x r 12m1

←s = 0 or ←m ≤ s < m x r 12m2

.14 The radix ←r and the minimum value ←m are fixed in any system. Therefore, only the significand and the exrad are saved as representations of a floating value. For a negative value (not a †constant), a minus sign is also saved with the significand. Regardless of the system values of ←r and ←m, we assume that ←r = 2 and ←m is one-half. The language permits inquiry into the values of significands and exrads based on radix and minimum of

these values. Therefore, with respect to value, internal representation of floating values exhibits (so far as the programmer can see from results) the relationships: 12n

$$v = s \times 2 \qquad 12n1$$

$$s = 0 \text{ or } 1/2 \leq s < 1 \qquad 12n2$$

.15 †Floating:constants are written with the assumption that, externally, r = 10, and there is no m. Thus, the value of a †floating:constant is given as: 12o

$$v = s \times 10 \qquad 12o1$$

.16 A †floating:constant must not contain any †spaces. In the syntactic equation for a †floating:constant, the †number (or †numbers) and the †decimal:point (if present) give the value of the external significand. The †scale (with or without its †plus:sign or †minus:sign) following E gives an exrad (exponent of the radix) to be used as a power of ten multiplier. If the exrad is zero, it and the E can be omitted. To be a †floating:constant, the †symbol must contain a †decimal:point, or a †scale as exrad, or both. It must not contain an A; that would make it a †fixed:constant. 12p

.17 A †floating:constant can contain information relating to the precision of its internal representation. The †scale following M gives the minimum number of magnitude bits in the significand of the internal representation. In most systems, there are one or two or, at most, a very few modes of representation of floating values. If the †scale following M is greater than the maximum number of magnitude bits in any of the system-dependent modes of representing floating values, the †floating:constant is in error. Otherwise, the compiler chooses the mode with the smallest number of magnitude bits in the significand at least as large as the †scale following M. If there is a choice of exrad size also, the compiler chooses one that can encompass the value of the †floating:constant. These sizes are based on the numbers of bits in the actual representations, not on what may be a fictional assumption that the radix is 2. If the M and its following †scale are omitted, the compiler chooses its normal mode of floating representation or one that can contain the value. 12q

.18 A fixed value is an approximate numeric value. Within the computer, it is represented as a string of bits with an assumed binary point within or to the left or right of the string. The number of bits in the string, not counting a sign bit if there is one, is the size of the fixed value. The number of bits after the

point (positive or negative, larger or smaller than the size) is the precision of the fixed value. 12r

.19 A †fixed:constant is seen, in the syntactic equation above, to be an †integer:constant or a †floating:constant (without an ←M and its †scale) followed by the †letter ←A and a †scale. The ←A and its †scale are essential to make the form a †fixed:constant. †Spaces are not allowed anywhere within a †fixed:constant. All that precedes the ←A determines the value of the †fixed:constant. All that precedes the ←A determines the value of the †fixed:constant (which may then be truncated on the right). The †scale after the ←A tells how many bits there are after the point. (If the †scale is negative, the bits don't even come as far to the right as the point). The size of the †constant is the number of bits from the leftmost one-bit to the number after the point as specified by the †scale after ←A, inclusive. Here are some †fixed:constants, their values, their sizes, and their precisions: 12s

.20 There must be no †spaces within a †fixed:constant. The system may impose a size limitation on fixed values. 12t

.21 †Integer:constants, †floating:constants, and †fixed:constants cannot have embedded †spaces and cannot have negative values. Both of these characteristics are changed for †status:constants and †qualified:status:constants. In †status:constants and †qualified:status:constants, there must be no †spaces within the †status, within the qualifying †name, or between the ←V and the †left:parenthesis. There may be †spaces elsewhere within such †constants. 12u

.22 †Status:constants and qualified:status:constants represent constant integer values. How they become associated with these values and how they may be used are explained elsewhere. In distinction to †integer:constants, which can only stand for zero and positive integer values, †status:constants and qualified:status:constants can also stand for unvarying negative integer values. 12v

2.9 Computer Representation of †Constants and †Variables 13

JOVIAL is designed to be compatible with binary computers, machines in which numeric and other values are represented as strings of binary digits, ones and zeros. The bits (binary digits) of a computer are organized in a hierarchical structure. A compiler may impose a different structure on the computer, but for reasons of efficiency it usually adopts a structure identical to or at least compatible with the structure of the machine. The structure discussed in this section is the system structure; i.e., the structure presented to the programmer by the combination of a

particular computer and a particular JOVIAL compiler that produces object code for that computer. 14

.1 JOVIAL †program:declarations are not completely independent of the system. The extent of dependence, however, is related to the use of certain language features. Dependence is increased by the use of features, such as †pattern:constants and ←BIT, that relate to bit representation or those, such as ←LOC, that relate to system structure. The value of a †pattern:constant is completely independent of the system, but its use implies knowledge of the representation of other data. It is that knowledge, built into te †program:declaration, that is system dependent. 14a

.2 Even if such deliberate system dependence is avoided, the programmer must still have knowledge of structure and representation in his system so that he may know the limitations on precision, how his tables must be structured, and how to avoid gross inefficiencies. For example, in processing long strings of character data, it is often much faster to examine and manipulate them in word-size, instead of byte-size, hunks. 14b

.3 A "byte" is a group of bits often used to represent one character of data. The number of bits in a byte is system dependent. Although JOVIAL permits some leeway in positioning bytes, there are usually preferred positions. When referring to these preferred positions, we often use the term "byte boundary". 14c

.4 A "word" is a system-dependent grouping of bits convenient for describing data allocation. Entries and tables are allocated in terms of words. Data are overlaid in terms of words. The maximum sizes of numeric values may, but need not, be related to words. Word boundaries usually correspond to some of the byte boundaries. 14d

.5 The "basic addressable unit" is the group of bits corresponding to each machine location. In many machines, the basic addressable unit is the word. In others, it is the byte. If it is the word, each value of the location counter refers to a unique word. If the basic addressable unit is the byte, each location value refers to a unique byte. In these latter circumstances, it often happens that adresses are somewhat restricted. For instance, it may be permitted to refer to a string of characters starting in any byte, or to double-precision floating values starting only in bytes with locations divisible by 8. 14e

.6 Integer and fixed values are represented in binary as strings of bits. The number of bits used to represent the magnitude of a value is known as its size and is (in most cases) under the control of the programmer. The position of the binary point is

understood and takes up no space. For signed values, the sign bit is an additional bit not counted in the size of the value. For purposes of the use of ←BIT, the sign bit is considered to lie just to be left of the most significant bit accounted for by the size of the value. The maximum permissible size of an integer or fixed value is system dependent. The maximum size of a signed integer or fixed value is one less than this system-dependent size and the places where unsigned values of maximum size may be used are restricted; i.e., they must not be used in conjunction with any †arithmetic:operators, nor with the four nonsymmetric †relational:operators ←<, ←>, ←<=, ←>=, and when used with the symmetric †relational:operators (←= and ←<>) the other operand must not be signed. 14f

.7 The compiler determines the sizes of †constants. The programmer usually supplies the sizes of †variables. The size does not include the sign bit for signed data. For unpacked or medium packed data, there may be more bits in the space allocated for an item than are specified by the programmer. Whether or how these extra bits are used is system dependent, but in any case they are known as "filler bits". The sign bit, if there is one, and any filler bits are to the left of the magnitude bits. It depends on the system whether the sign bit is to the left or right of the filler bits. 14g

.8 The meanings of bit values ←0 and ←1 are not stipulated, but in most implementations ←0 stands for ←0 and ←1 for ←1 in positive values. For negative values, there is considerable variation. All the following are known and acceptable representations of ←−12 in an unpacked, signed, integer item declared to be four bits long: 14h

←1111111111111111111111111111111111111111110011 14h1

← 10000000000000000000000000001100 14h2

← 10100 14h3

.9 Floating values are represented by two numbers, both signed. The significand contains the significant digits of the value and the exrad is the exponent of the understood radix. Each system has a standard mode of representing floating values, known as "single precision", with a specified number of bits in the significand and a specified number in the exrad. Many systems have one or a few additional modes in which there are more bits in the significand, the exrad, or both. If there is more than one mode, the programmer can usually choose the mode for each floating value. In the absence of an indication of such choice, the

compiler will usually choose single precision. The radix is an implicit constant having a system-dependent value. 14i

.10 Character values are represented by strings of bytes, each byte consisting of a string of bits. The number of bits in a byte is system dependent. The number of bytes used to represent a character value is under control of the programmer, but there is a system-dependent maximum. 14j

.11 A character item that fits in one word is always stored in one word, by the compiler. By use of a †specified:table:declaration, the programmer may override this rule. If it is not densely packed, a character item always starts at a byte boundary. If it crosses a word boundary, a character item always starts at a byte boundary. The programmer must not attempt to override this rule. 14k

.12 An entry variable whose relevent †table:declaration does not describe it as being of some other type is a bit variable. It is merely the string of bits, of a size corresponding to the number of words in an entry, representing the entry. 14l

2.10 †Spaces, †Comments 15

The syntactic structures of all †symbols have now been explained, as well as the places where †spaces are permitted or prohibited within them. All further structures that go to make up a †program:declaration are composed of strings of †symbols. It is always permitted to place one or more †spaces between †symbols. It is sometimes required to put at least one †space between †symbols. The criterion is to avoid ambiguity. Comments can often replace required †spaces. 16

.1 †Spaces are required in many situations to enable the compiler to detect the end of one †symbol and the beginning of the next. Generally, at least one space is required between two †symbols of any class except †ideograms, but including the †quotation:mark. The rule is exhibited in detail in the following table. The rows are labelled with the ending †signs of the left †symbol of a pair of †symbols. The columns are labelled with the beginning †signs of the right †symbol of a pair. "SR" at the intersection of row and column indicates that at least one †space is required between the pair of †symbols: 16a

.2 A †comment may occur between †symbols. However, it must not occur within a †definition nor within any †constant, such as a †status:constant or a †character:constant. A †comment may be used instead of the required †space between †symbols unless use of the †comment would cause the occurrence of two †quotation:marks in

succession. In fact, only the use of a †comment can bring about the situation indicated by the lower right corner of the table above. Introduction of a †comment between †symbols where a †space is permitted but not required may then require a †space to prevent the †comment from interfering with another †symbol. 16b

.3 A †comment must not be used where the next structure required or permitted by the syntax is a †definition. That is, a †comment must not follow the †define:name or a †right:parenthesis in a †define:declaration. And a †comment must not follow a †left:parenthesis or a †comma in a †definition:invocation. A †comment, as defined above, must not occur in a †definition delimited by †quotation:marks. 16c

JOVIAL Manual, Chapter 2

(J30166) 2-MAR-74 15:39; Title: Author(s): Duane L. Stone/DLS;
Distribution: /RJC; Sub-Collections: RADC; Clerk: DLS;
Origin: <PETELL>C2.NLS;1, 2-MAR-74 15:37 DLS ;

FEED 2-MAR-74 16:24 30167

Response to Feedback problems from Bell Canada

(This short message will also act as a test of the Journal distribution problem to ident PAN. NOTE also that there was a bug in the Journal system about two weeks ago affecting regular delivery that was fixed, and has not recurred to our knowledge).

Response to Feedback problems from Bell Canada

Re: SNDMSGed problems to Feedback 1

Inez, OK on the DEX stuff,will send you a manual. A programmer will look at your DFX file (I assume it was created by DEX and then processed into the NLS file.) 2

The IDENT problem for Penny Napke is not serious, but I'll see what we can do about it anyway. As for Journal mail receipt, this is being sent to her ident as well and will act as a test.
I'll be glad to do the on-line training if you feel you need it (Jim N reports that you are doing real well). I'll use a different setup for the audio link at this end that should make it easier to talk.
Also, I think it would be a great help if you would look at the TNLS Course outline (link to -- bair,course,:mG) that I am transferring to Office-1 from ARC and note those things you would like to learn more about (aside from DEX). Notice the numbers in parentheses which refer to the level of importance/usefullnes of each of the commands/concepts listed.
We are really trying hard to figure out the solution to Day's file problems. One cause is the deletion of partial copies. It is best to NEVER delete a PC unless you have also deleted the file itself. To get rid of unwanted PCs, use Execute Unlock which destroys the PC and of course all the changes that were made to the file itself since the last Update. I think that is the problem with "BOOK.NLS;1.
Well, I think that covers everything for now. Had a good visit with Phil Feldman on Fri., and also saw Mike Bedford. Jim 3

FEED 2-MAR-74 16:24 30167

Response to Fedback problems from Bell Canada

(J30167) 2-MAR-74 16:24; Title: Author(s): Special Jhb
Feedback/FEED; Distribution: /KWAC(fyi) IMN PAN DAY; Sub-Collections:
SRI-ARC KWAC; Clerk: FEED;

tickler for month of February 1974

(fm2) 4 February - Monday 1

0830 hrs. Branch Chief's Meeting 1a

Due Date ISIS - Prepare Proposed Data Exchange annex (DEA) memo of understanding paper (Route through ISM) - Completed 1b

Due Date - ISIM/Liuzzi/Wingfield - Draft AFROTC ROC for a Mgt Info System/Decision Model - completed 1c

(ft2) 5 February - Tuesday 2

(fw2) 6 February - Wednesday 3

ISC Confessions 0830 hrs. 3a

1330 hrs. - Tom Bucciero's IR&D Program Briefing to Division 3b

(fth2) 7 February - Thursday 4

Information Sciences Division TODAY scheduled for briefings/tours which best describe their capabilities/activity for the new Commander, Col Giesy. 4a

0830 hrs. Branch Chief's Meeting 4b

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 4c

Due Date - ISI/Tom Bucciero - Requirements for RADC Technical Reports Automata DataCompleted 4d

Due Date - ISI/Tom - REPLY ASAP - Contracts for Procurement of Data Processing Services - Completed (No comment) 4e

(Bff2) 8 February - Friday 5

Bobbie: Travel figures due by noon. 5a

RCA presentation on Communications R&D -- A-119 - Bldg. 106 - 9:00 to 12:00 5b

(fm3) 11 February - Monday 6

0830 hrs. Branch Chief's Meeting 6a

Energy Conservation Officer - DAY FOR CAPT DAUGHTRY 6b

1500 hrs. - Visitors from AFSC ESD USAF - Col Thayer 6c

tickler for month of February 1974

Due Date -ISIM/ISIS - IRSD On-Site Review SDC - W. Rzepka & S. DiNitto attendees (Forwarded to DOT) 6d

(ftJ) 12 February - Tuesday 7

Due Date - ISI/Tom B. - Issuance of SF 131 to RADC Emergency Essential Civilian Personnel (AF 279 & aF 83) - Reply through ISM...Completed 7a

0830 hrs. Visitors from AFSC ESD USAF - Al Barnum 7b

(fwJ) 13 February - Wednesday 8

ISF Confessions 0830 hrs...Cancelled 8a

Due Date - ISI/Tom - Reply to memo subject: Extremely Hazardous Structural Weakness in Metal Executive ChairsCompleted 8b

Due Date - ISI/Tom B. - Letter of Authority for Equipment - Completed 8c

(fthJ) 14 February - Thursday 9

HAPPY VALENTINE'S DAY 9a

0830 hrs. Branch Chief's Meeting 9b

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 9c

Bob Stover/ISIS - Orientation of new employees - Bldg. 309, Classroom A 9d

Due Date - ISI/F. Tomaini - Unsol Prop for Short Course - Dr. Kramer, "A Statistical Instructing & Consulting Service" - Completed 9e

Due Date - ISIM/ISIS/ISI/T. Bucciero - Project Engineers Bimonthly Review of tech completions of contracts - Completed 9f

Timecards due today 9g

Officers Commander's Call - 1600 hrs. Officers Club - ALL OFFICERS MUST ATIEND 9h

(ffJ) 15 February - Friday 10

Bobbie: Travel figures due by noon. 10a

tickler for month of February 1974

Due Date - ISIM - TT AFSC to RADC/DO - Subject: Generalized Data Base Management Sys (GDBMS) - request funding for proc. for USAF - Reply to AFSC - Completed 10b

Due Date ISIM/ISIM - Technical Achievement Award submissions and Incentive Award submissions due to ISM - Completed 10c

Due Date - ISI/Tom Bucciero - Identifying Potential Areas for R&D Activity (Reply through ISM) - Completed 10d

Due Date - ISIS/ISIM/ISI - Projected Leave Schedules for Division - Completed 10e

(fm4) 18 February - Monday HOLIDAY 11

(ft4) 19 February - Tuesday 12

E. Kennedy & R. Iuorno Meeting w/Lt Col Warloe at 1400 hrs. 12a

F. Tomaini - TDY 12b

Due Date - ISIM - IR&D Evaluation - Project 31 & 32 (RCA)Completed 12c

Due Date - ISIS/ISIM - 1152s due in ISM NLT 20 Feb for MVCC spring term courses- Completed 12d

Due Date - ISIM - Mgt Eval of Training over 40 hours - Liuzzi, Calicchia, Bergstrom, & Stone - Completed 12e

Due Date - ISIM/ISIS - FY-75 D&F Submission - Due ISM today - Completed 12f

ISF Confessions - 1330 Hours 12g

R & T Selection of the Month is due in ISI. 12h

(fw4) 20 February - Wednesday 13

F. Tomaini - TDY 13a

ESD/RADC Working Meeting - 0900 hrs. (C-102) - Al Barnum 13b

R & T Selection of the Month is due in ISM. 13c

Due ISM - 1152s for Term V, University of Southern California - Dates 4 March through 29 april 1) ASM 525 - Probabilistic Models in Decision Making and 2) ASM 557 - Systems Integration - Tuition Rate $270 per person. - Completed 13d

tickler for month of February 1974

D - Completedue Date - Story Idea Program due in ISM 13e

(fth4) 21 February - Thursday 14

F. Tomaini - TDY 14a

0830 hrs. Branch Chief's Meeting 14b

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 14c

Tentatively scheduled - Mr. Aaron Navarro of Planning Research Corp. will give a summary briefing of the work accomplished under Contract F30602-73-C-0198. Involves imbedded software monitors in user IDS programs to collect CPU and I/O timings and frequency an IDS module uses. Time: 1330 hrs. Place: Bldg. 3, Conf Room 1a - ALL INTERESTED PERSONNEL ARE WELCOME - Focal point - Capt Daughtry 14d

(ff4) 22 February - Friday 15

F. Tomaini - TDY 15a

Bobbie: Travel figures due by noon. 15b

Due date Tom Bucciero - Submission of FY-75 Contract Maintenance Requirements - RADC 66-5 (TUMM ltr. dtd. 16 Jan 74) - Completed 15c

Due Date - ISIS/S. DiNitto - Negative Interim Report Inventions - F30602-72-C-0467 - Computer Sci CorpCompleted 15d

(fm5) 25 February - Monday 16

0830 hrs. Branch Chief's Meeting 16a

Due Date - ISIM/W. Rzepka - Request for Technical Evaluation - PR-B-4-3250 (SDC - Completed 16b

Due Date - ISIM - Unsol Prop DO 117-74 "Computerized Identity Verification for Security Control - Completeed 16c

(ft5) 26 February - Tuesday 17

Due Date - ISIM/Capt Daughtry - Mil Nonrated Noncrew Member Flight Requirements for FY-75...Completed 17a

Collect topic write-ups today by noon for confessions. 17b

(fw5) 27 February - Wednesday 18

tickler for month of February 1974

0830 hrs. ISI Confessions 18a

Due Date - ISIM/R. Iuorno; ISIM/E. Kennedy; ISIS/S. DiNitto; ISIS/R. Robinson(Completed) - Submission of DD 1634s 18b

(fth5) 28 February - Thursday 19

Demonstration on common aspects of the ARPANET and the NLS - FOR Charles Strom and Comm people - Focal point - E. Kennedy. Cancelled for the time being 19a

0830 hrs. Branch Chief's Meeting 19b

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 19c

Form 2's (employee time expenditures) are due today. 19d

Form 6's (projected manpower) are due today. 19e

RJC 4-MAR-74 06:55 30168

tickler for month of February 1974

(J30168) 4-MAR-74 06:55; Title: Author(s): Roberta J. Carrier/RJC;
Distribution: /RJC; Sub-Collections: NIC; Clerk: RJC;

JLM 4-MAR-74 08:43 30169

ARBITS

I have agreed to meet with Bob Kenyon, theursday, 7 March to resolve which task if any we would propose to work on in conjunction with this prograa, so need your inputs, reactions by then

AFBITS

Metting Notes on a meet on above topic 1

ATENDEES-J Mac,Bob Kenyon,Dave Griffith,Lt Foss,Col Harval,Mr Meeketa,W Ptichard 2

DISCUSSION 3

Bob Kenyon opened by stating it was the goal of the meeting to see if there were some task which RADC could logically do as part of the program,like filling holes,checking assumotions etc 3a

Col Harval replied he was sure there was but he was not too confident as to when funding would be avaiable for these kinds of tasks.We responded ,lets identify the tasks and worry about the mon. 3b

Harval then listed a few I think they can be listed as theree 3c

Wants to know the people kinds of problems one can have and how to overcome when terminals are introduced. 3c1

Difference inpersonalities,ages,types of terminals,training-how long rejection % 3c1a

He asked if we had any psychological talent ,I replied that Dr Kennedy if a experimental psychologist,he seemed quite pleased at this and said that anything we could do for him in this area would be of great help.I pointed out that it was a task we are going to do anyway and there inputs could help guied us as to what kinds of things we should be lookeing for. 3c1a1

People,polices,procedures whivh were required to make this kind of technologywork 3c2

The PSOkind of operation for instance he indicated a interest in also this is the kind of thing the Director of Admin is talking and implementing worth their work centers. 3c2a

The handling of form data.The whole Air Force rruns on forms and it seems that for at least for a while we will have to interface with them but all futre systems talk about they being filled out at a terminal stripped of their data for some dbms and the form spit out where required. 3c3

Spent quite a bit of time talking about something like travel request the comm people feel maybe we could implement here at radc in DC and IS a automated process for this whole process from request to actual voucher.They pointed out that

at ESD a voucher must be submitted within 5 working days as tte finance guys are going nuts with estimated data which is way off. 3c3a

What can we do with the system we cannot do now,not very clear but groping for some indication of the great things that this kind of thechnology can offer the AF worker on a base. 3c3b

What kinds of people can we elimante in terms of numbers types etc. 3c3c

Again he as well as we are groping but is the kind of thing we have talked about. 3c3c1

We then got a pitch on what the AFBITS people have been doig in conjunction with MPC in the way of examing the way they do business now an dtrying to indientif what sorts of automated process would help. 3c4

Iney have been to 3 bases looking i dieatl at the personnel shop. 3c4a

They say the first most obvious problem is that the users now view the computer as a place to store records not a device to help one enter the dta. 3c4a1

They claim that currently the data takes so lomg getting into the compute which is a ssytem on the 3500 called blimps that the data is allwasy out of date. 3c4a1a

They tend then to think that some kind of capabiltiy to help the user to fill out the form at his terminal might be a first step so are very much interest what one can do in aiding in this process. 3c4a1a1

Also they observe need some way of strippiing the data off from the form and enerteing it into the Blimps system . 3c4a1a2

They said as it now stands the record process on say trianing is a mess.They indicated that most airman do not have up to date training records when the come into a base and the local guys have to learn fro themselves what the guy can do. 3c4a1a3

They fell they have done enough to convince themselves that a contractor could now go on a base and do a simalair analysis for a entire base using their

approach and then a pilot base could be implemted for sight and sound.They hope to let a contract next year to do just that . 3c4a1b

AThe AFBITS program is a ESD program to persue the inter base communications which the BCM study indicated would improve the AFeffiectiveness and save them money .They have no funds at the moment but hope to secure some from some kind of project within AFSC.They are also trying to incorparate it within SADPR and in fact the comm cost include the coax cost on a base but not the rest of something ,whatever that is.SADPR does talk about the need for Minis on a base to support highly interactive kinds of things like TEX processing though as of now they use the term text editing,I keep saying texprocessing not just editing and i guess it is working.FBITS 3c5

We then got a pitch from a D Witt on the overall program and what kinds of capablties they expect or desire for each base. 3c5a

They plan to implement the version 3a of the BCM study which talks about a Hub kind of arrangenet wit a number of TIP type deveices controlling the use and acess to a coax cable . 3c5a1

He cited 3 reasons for going to coax 3c5a1a

I guess there is 4 reasons,they talked about the hivh cost of modems per terminal if you stuch with twisted pair.The plan on havivng a number of video terminals being driven by a central driver. 3c5a1a1

desire to transmit video-microfiche 3c5a1a2

They are really hung up on the use of micreofiche to handle most of the data.I argued that people want to use the data not just view it but with little sucess.They did agree thaat maybe it was a area we could look into by using the DataComputer for some applicatinn and give them a report of respective cost effectiveness.Their only other justificatiin was that many of the data bases were now going into micro film and if they were to implement a system on a typical base it must interface with existing capabilities. 3c5a1a2a

Conferencing 3c5a1a3

That the system they implent must last into the year 2000 so why not go the whole reoute and besides the cost are quite comparable to twisted pair. 3c5a1a4

The question at hand is what if anything do we want to propse as atask within this program,it is not funded yet it seems it is one we should be in on if it goes.I have agreed to meet with Bob Kenyon thursday 7 March so need your inputs,reactions etc by then. 3c6

JBP 4-MAR-74 11:19 30170

host names on line

copy to kudlick, (question to mdk = when will it be running?)

JBP 4-MAR-74 11:19 30170

host names on line

mark:
i favor the proposal put forward by kudlick in rfc 608, the difficulty or ease of reading the file can be handled bu a program much more easily by a program, after all computers are suposed to make things easy for people not the other way arround. as for a secondary computer i nominate the datacomputer.
--jon.

1

JBP 4-MAR-74 11:19 30170

host names on line

(J30170) 4-MAR-74 11:19; Title: Author(s): Jonathan B. Postel/JBP;
Distribution: /MDK MCK; Sub-Collections: NIC; Clerk: JBP;

User Definition Report

The text version is available as <USING>UDEF-REPORT.TXT;2 and the NLS version is also available as (using,udef-report,0:w). We would appreciate your comments.

User Definition Report

<USING>UDEF-REPORT.NLS;4, 4-MAR-74 10:49 NJN ; 1

User Definition Report

USING Note # 11
NIC # 21684

J. Feinler
A. W. Hathaway
N. J. Neigus
5 MAR 74

Users of the ARPA Network

1a

INTRODUCTION 1b

This document attempts to define who are the users of the Arpanet, what kind of usage they make of the network, and what are some of their interests and objectives. It is submitted to the Users Interest Working Group (USING) by the User Definition Subcommittee for the purpose of helping USING identify specific user problems and make recommendations accordingly. 1b1

WHO ARE CURRENT USERS OF THE ARPANET 1c

At present there are no statistics that adequately describe how many users there are on the ARPANET, and there is no network-wide user analysis system in operation to help us discover what functions available on the net are most used and for what purposes. We can only make suppositions at this point. 1c1

The one set of figures we have is taken from the ARPANET Directory; unfortunately, they refer mostly to host computers, except for the figures on individuals, which include only those who communicate with the Network Information Center (and we are not sure what percentage of the total network user population they represent.) We offer the figures here for an indication of the affiliations of the network community. 1c1a

	Gov't*	University	Commercial**	Foreign	
SERVER HOSTS	3	19	10	1	1c1a2
USER HOSTS	10	14	8	1	1c1a3
TIPS	12	5	8	2	1c1a4
INDIVIDUALS	248	379	328	83	1c1a5

1c1a1

ORGANIZATIONS	33	43	37	14

1c1a6

*Includes military and non-military (such as NASA, NBS, etc.)
**Includes non-profit research organizations. 1c1a6a

It would clearly be useful to obtain usage figures in the future, and we will make recommendations for some preliminary statistics-gathering. A further effort might be coordinated with the Performance Measuremnet Lab/Consumers Union. 1c1b

A precaution, however, is necessary: the nature of the ARPANET is changing (e.g. the types of resources available, the focus of the services offered) and as a result the composition of the user population will also change. With the heavy emphasis in the past on network development, most of the work being done by network users contributed directly to this goal. Programmers are probably the heaviest users at present, and many of the exisitng resources are biased toward their usage. It appears, however, that future development will correct this bias. 1c1c

USER PROFILE BASED ON ACCESS 1c2

There are several angles from which one might analyze the user community: according to their end goal (their purpose in using any computing facility, and particularly the network), the resources they use and the functions performed on the net, and their method of interfacing with the net. The latter categorization will be useful in diagnosing problems along the path between the user and his resource. This ranges from site-specific problems for the local user with no network association to complicated inter-host and subnetwork problems for the distributed-resource user who sees the entire network as a single machine available from his terminal. 1c2a

1. Single Host Users 1c2a1

a. Local User (A user with a direct line into the one computer he uses - usually the home facility or 'company' computer). 1c2a1a

This user deals directly with site personnel for any problems. 1c2a1a1

b. Remote-Local Single-Host Interactive User (A user accessing a single host through a TIP or ANTS with no computing facilities on his end of the connection). 1c2a1b

This user relies on the service host and a given network group (TIP, ANTS, NCC, or other) to solve his user problems and issues. He is network dependent, but single host oriented, and is largely oblivious of network hosts other than the one he is using. 1c2a1b1

c. Remote Single-Host Batch User (Currently a user using an RJE device dialed directly into a single distant computer host.) 1c2a1c

This user's problems are similar to the remote single-host interactive user, except that his turnaround time is longer. In the future when RJE devices are attached to both the ANTS and TIP, responsibility for user issues will shift to those support groups and away from the service host. 1c2a1c1

2. Multi-Host Users 1c2a2

a. TELNET user (A user using his primary host's user-TELNET program to occasionally access other network computers.) 1c2a2a

His motivation generally is to use a resource that is not available on his home host. Responsibility for service lies between the two host computers and the overseeing network group. 1c2a2a1

b. Function-Oriented Protocol User (A user needing the use of other protocols such as FTP or RJE to accomplish work on other computers) 1c2a2b

The user will most often deal with the site providing the user-process front-end for the protocol, unless he accesses the server directly. 1c2a2b1

c. Multi-Server User (A user accessing many hosts through a TIP or ANTS because he has no computing facilities of his own). 1c2a2c

This user spreads his work over many hosts and may not have a home host. This group has the most direct network interaction. 1c2a2c1

3. Distributed Resource Users 1c2a3

This user accesses resources from other network computers through a front-end on his primary computer; all "foreign" computers and inter-host communication are invisible to him. The front-end site maintains responsibility to the user for all problems with the system. 1c2a3a

USER PROFILE BASED ON FUNCTION 1c3

Once we have catalogued "how" users access the net, we need to pinpoint "what" it is they are doing--i.e. the types of computing function they utilize and the type of job they are trying to accomplish. This will make it easier to evaluate available and projected resources to best suit the needs of the user. 1c3a

We present here a table of typical computer applications followed by a listing of computer use functions (numbered for convenience). The table indicates which of the use functions would be invoked by a novice, average, or expert user to carry out the particular application. 1c3b

A. Program preparation (interactive). 1c3b1

novice:	1,2,3,4,5,6,7,13,14
average:	1,2,3,4,5,6,7,8,13,14,15,17
expert:	1,2,3,4,5,6,7,8,11,13,14,15,17,20,21,22 1c3b1a

B. Program preparation (batch). 1c3b2

novice:	1,2,3,4,5,6,7,13
average:	1,2,3,4,5,6,7,8,13,14,15
expert:	1,2,3,4,5,6,7,8,11,13,14,15,22 1c3b2a

C. Execution of locally developed programs (programs written by or for the local user for which expertise exists locally). 1c3b3

novice:	2,4,6,7,15
average:	2,3,4,6,7,9,10,14,15,17,18
expert:	2,3,4,6,7,9,10,14,15,17,18,19,20,21 1c3b3a

D. Execution of remotely developed programs (application packages). 1c3b4

novice:	2,4,7,15,22
average:	2,4,7,9,10,14,15,17,18,22
expert:	2,4,7,9,10,14,15,17,18,19,20,21,22 1c3b4a

E. Data base creation and management 1c3b5

novice:	2,3,4
average:	2,3,4,10,18
expert:	2,3,4,10,18 1c3b5a

F. Documentation preparation 1c3b6

novice: 1,4
average: 1,4,17
expert: 1,4,17,20 1c3b6a

G. Teleconferencing. 1c3b7

novice: 12
average: 12,17
expert: 12,17,21 1c3b7a

H. Use of "mail" services 1c3b8

novice: 16
average: 1,16,17
expert: 1,16,17,21 1c3b8a

Following are some typical computer functions executed by users. Note that they are biased toward the programmer rather than the end user. 1c3c

1. Source program file creation, modification, deletion. Either interactively (editor) or batch (deck submission). 1c3c1

2. Data file creation, modification, deletion. User-created (character), program created (binary). 1c3c2

3. Object program library creation and maintenance. Compiling into specified library, use of generations of program changes, object module patching. 1c3c3

4. Specification of files for program I/O. Allocation of space, communication with various languages. 1c3c4

5. Program compilation. Optimization options, listing control, subroutines. 1c3c5

6. Program loading (linkage editing). Control of library search, specification of physical arrangement of modules, handling of "common". 1c3c6

7. Program execution. Calling main program, parameter passing. 1c3c7

8. Program debugging. Display of variables and registers, dumps, setting of variables and registers, stopping and restarting, break- points. 1c3c8

9. Control of devices. Tapes, disks, printers, readers, volume mounting. 1c3c9

10. Sharing of files. Access control, sharing by list, naming conventions. 1c3c10

11. Program-program interprocess communication. Naming conventions, command communications, data communications, control of receipt of messages. 1c3c11

12. User-user interprocess communication. Naming conventions, "linking" versus "sending a single message". 1c3c12

13. Message delivery. Submission, notification, delivery (on-line, off-line). 1c3c13

14. Obtaining system status information. Performance, other users, configuration. 1c3c14

15. Obtaining usage status information. Memory allocated, cpu time, charges, file storage used. 1c3c15

16. Access to "help" facilities. On-line, off-line, consultant, scenarios. 1c3c16

17. Controlling system operating modes. Keyboard mode, translations, message suppression, control of prompting. 1c3c17

18. File archiving. Automatic and/or user-controlled, restoring files. 1c3c18

19. Initiation and control of nonconversational jobs. Creating a job from a terminal session, "detaching" a terminal from a task, monitoring and controlling such a task. 1c3c19

20. Definition of user-written commands. Naming, parameter passing, sharing such commands, use of libraries. 1c3c20

21. System tailoring. Synonyms for commands, defaults for parameters, use of user-supplied messages. 1c3c21

22. Reporting of problems. On-line versus off-line, system problems, application program problems. 1c3c22

USER PROFILE BASED ON PROFESSIONAL INTEREST 1c4

This profile presents a list of kinds of users based on their professional interests. It should be emphasized that this list is representative rather than exhaustive, and although all of these types of users have been known to use the network, there is no reliable analysis of the type or volume of use by any given kind of user. Professional groups with similar uses of the network are listed together, and suggestions of some functions they might utilize are given. 1c4a

1. Systems work - Program and data preparation; program distribution 1c4a1

Systems programmers and analysts 1c4a1a

Network Analysts 1c4a1b

Operators 1c4a1c

Computer Hardware Experts 1c4a1d

EDP Personnel 1c4a1e

Computer Security Experts 1c4a1f

Graphics Experts 1c4a1g

2. Information retrieval and Data management - Data preparation and distribution; program preparation 1c4a2

Data Base Managers 1c4a2a

Information Retrieval Experts 1c4a2b

Management Information Specialists 1c4a2c

3. Office and Managerial Work - Message sending; documentation preparation and distribution; scheduling; filing and library work; accounting 1c4a3

Management Personnel 1c4a3a

Technical Writers 1c4a3b

Librarians 1c4a3c

Clericals 1c4a3d

Editors	1c4a3e
Accounting and Billing	1c4a3f
Project and Program Managers	1c4a3g
Military Planners	1c4a3h
Telecommunications Policy Makers	1c4a3i
Science Policy Planners	1c4a3j
4. Committee work - Documentation preparation; message sending; on-line (forum) discussion	1c4a4
Special Interest Groups	1c4a4a
Standards, Protocol Committees	1c4a4b
5. Applications - All of the above-mentioned functions	1c4a5
Mathematicians	1c4a5a
Engineers	1c4a5b
Behavioral Scientists	1c4a5c
Economists	1c4a5d
Political Scientists	1c4a5e
Communications Engineers	1c4a5f
Physicists	1c4a5g
Doctors, Medical Researchers	1c4a5h
Artificial Intelligence Experts	1c4a5i
Space Scientists	1c4a5j
Equipment Designers	1c4a5k
Speech Understanding Experts	1c4a5l

RECOMMENDATIONS 1d

Some preliminary statistics should be obtained. We suggest querying sites with nodes on the network, as well as analyzing the information already available at the NIC. 1d1

Reports filed by PI's from organizations associated with the net can be analyzed to discover what goals and functions are present in their interaction with the net. The figures on numbers of individuals associated with these sites could be further analyzed. 1d1a

Server sites could be queried about the number of users on their machines as well as the resources most frequently accessed (if that information is obtainable.) Any distincion between net and local users would be helpful. 1d1b

The relative usage of batch and interactive modes should be explored. 1d1b1

User sites could similarly be queried about the number of users, and the relative amount of network access among their users. Figures on which network sites were accessed most often, least often, etc. would be useful, if those statistics are gathered on-line. 1d1c

IIP sites could provide information on how many ports are available, both direct and dial-in, and what percentage of time these are being used. 1d1d

In the future, a larger scale analysis system could be established to find out who uses what and how often. This should be an automatic mechanism, and developed in coordination with the Performance Measurement Lab, which will be supervising other statistics gathering. 1d2

User Definition Report

(J30171) 4-MAR-74 11:45; Title: Author(s): Nancy J. Neigus, A. Wayne Hathaway, Elizabeth J. (Jake) Feinler/UDEF; Distribution: /USING; Sub-Collections: UDEF USING; Clerk: NJN;

JBP 4-MAR-74 12:18 30172

NCP references

yngvar:
i think i may have made a mistake in the nic number i gave you for jim white's note on ncp program design- the correct number is 5480. Also i have just discovered a report on the lincoln labs 360/67 implementation "an interface to the arpa network for the cp/cms time-sharing system" by winett and sammes, technical report 1973-50, novemaber 1973.
--jon.

1

JBP 4-MAR-74 12:18 30172

NCP references

(J30172) 4-MAR-74 12:18; Title: Author(s): Jonathan B. Postel/JBP;
Distribution: /YL; Sub-Collections: NIC; Clerk: JBP;

JBP 4-MAR-74 12:38 30173

Rom Banin:
Several weeks ago we chatted over the phone about your network control program and the special real time data requirements you have, you indicated at that time that you would send me some description of your work (e.g. design specifications of the ncp). I have not yet received anything, did it get lost in the mail?
--jon.

1

(J30173) 4-MAR-74 12:38; Title: Author(s): Jonathan B. Postel/JBP;
Distribution: /RAB3; Sub-Collections: NIC; Clerk: JBP;

DHC 4-MAR-74 15:57 30174

Filenaming convention for NMC users.

PLEASE preface all your nls filenames with your IDENT. For example, I would name a file of mine to be DHCFILE.NLS. This is the only way we can keep track of who belongs to what files.

PLEASE, PLEASE, PLEASE follow this request. Thanks. Dave. 1

DHC 4-MAR-74 15:57 30174

Filenaming convention for NMC users.

(J30174) 4-MAR-74 15:57; Title: Author(s): David H. Crocker/DHC;
Distribution: /UCLA-NMC; Sub-Collections: NIC UCLA-NMC; Clerk: DHC;

Summary of events 4 March related to WWDMS

This is an attempt to summarize the discussion of WWDMS and RADC/ISI committment to the Air Force Data Systems Design Center (AFDSDC) on 4 March 1974. 1

The AFDSDC via Mr. Bob Majors, requesed RADC/ISI provide a two-man level effort to devise and execute an approach to evaluate the WWDMS B-3 file mainteance (management) capability. Of course the structures include those created for sequential,indexed-sequential, and I-D-S systems. The effort is to culminate in an evaluation, or report to AFDSDC in mid-May, 1974. Bear in mind that WWDMS B-3 will only be released on or about 1 April, 1974, and subsequently JTSA is not expected to complete its evaluation of it for four to six months hence (a reason why we may be involved here in this point in time) 2

In connection with this effort, Mr. Majors of AFDSDC will be visiting RADC/ISI on or about 18 March 1974. Therefore, we must have as much done in the way of a plan of action and all resources identified (documents, people, agencies, committee reports) 3

Mr. Deane Bergstrom will consult with Auerbach Associates (Mulhauser inc.) on their approach and results so far on developing a methodology for testing WWDMS; that is, with respect to those functions that relate to File Maintenance. 4

Mr. Majors has identified Capt Cecil Martin as being the point of contact all work relating hereto. Some of our people here nave had some informal contact with capt Martin. 5

With the release date of WWMCCS 5.0 and subsequently WWDMS B-3, being 1 April 1974, it is apparent that RADC/ISI must interact with DCA/JTSA at Reston, Virginia to exercise any release of WWDMS B-3. There is also some sentiment for the idea of several people (at least two) going to Gunter by the end of March to assist in AFDSDC studies of WWDMS. Of course this will be true of WWDMS B-2 (WWMCCS 4.0) given that we are not able to exercise WWMCCS 4.0 on the G635 computer. At this point in time we must observe caution in considering early operation of WWMCCS 4.0 on the G635. 6

Although we have committed a two-man effort for two months, we expect that several people will be involved so that we can summarize early inputs relating to WWDMS file maintenance from sources such as Auerbach, JTSA, and Honeywell documents. 7

A basic plan for studying the WWDMS B-3's file mainenance capability will be developed by 11 March 1974 8

Summary of events 4 March related to WWDMS

(J30175) 5-MAR-74 06:52; Title: Author(s): David L. Daughtry/DLD2;
Distribution: /FJT RFI DFB MAW RAL RBP JPC; Sub-Collections: NIC; Clerk:
DLD2;
Origin: <DAUGHTRY>MAR04-WWDMS.NLS;1, 5-MAR-74 06:42 DLD2 ;

Marcia:
Thank you for cleaning up the unnecessary "network" delivery in my ident entry. As for the Hardcopy option, i really do fine a use for the majority of the hardcopy items, so i would not like to be with out them. However if it can save some on the postage i would not mind having it delivered less frequently, a mailing once a week would be suficient, or if there were a very few items once every two weeks. i think i can understand your problems with the hardcopy delivery and would like to help reduce them if i can do so without loosing the effectiveness of the journal in my work. Perhaps if there were an easy way to indicate which items delivered online i also wanted to be delivered in hardcopy i could reduce the number of items that i have printed and mailed.
--jon.

1

(J30178) 5-MAR-74 13:23; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /MLK; Sub-Collections: NIC; Clerk: JBP;

Joel:
Some one showed me a copy of your report on the NCP and Telnet programs you implemented at Lincoln. The report looked good, but i didnt get a chance to really read it. If you could send me a copy i will read it. It seemed like the kind of thing i am often asked for - a report which implementers of new NCP can look at to get some idea on how other have done it.
--jon.

1

(J30179) 5-MAR-74 13:28; Title: Author(s): Jonathan B. Postel/JBP;
Distribution: /JMW; Sub-Collections: NIC; Clerk: JBP;