

Various Filters and Techniques for:

Serial Data Analysis

Part 2, VCL Protocol

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Contents

1	Filters for use with VCL's Protocols	3
1.1	BAT file for VCL Processing	3
1.1.1	HVCL.txt Test File	4
1.2	FixVCL01	5
1.2.1	Listing of FixVCL01.1	6
1.3	FixVCL02	8
1.3.1	Listing of FixVCL02.1	9

¹\$Header: d:/Binder4/sda2/RCS/Sda2VCL.tex,v 1.3 2008-06-10 09:20:54-07 Hamilton Exp Hamilton \$

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1 Filters for use with VCL's Protocols

1.1 BAT file for VCL Processing

```
makesecs %1.txt %1.0ms
fixvcl01 %1.0ms %1.1vc
fixvcl02 %1.1vc %1.2vc
1         %1.2vc
```

²\$Header: d:/Binder4/sda2/RCS/VCL.inc,v 1.3 2008-08-13 10:26:45-07 Hamilton Exp Hamilton \$

1.1.1 HVCL.txt Test File

1 FTS capture buffer (8/12/2008 10:46:17 AM)
 2 Event 1 (8/12/2008 10:37:30.678513 AM) through
 3 Event 202 (8/12/2008 10:45:26.871704 AM)

4

5 Sd Event# Timestamp Hx

6 DTE 1 8/12/2008 10:37:30.678513 AM 80

7 DTE 2 8/12/2008 10:37:30.679655 AM 55

8 DTE 3 8/12/2008 10:37:30.680795 AM 01

9 DTE 4 8/12/2008 10:37:34.550182 AM 80

10 DTE 5 8/12/2008 10:37:34.551330 AM 75

11 DTE 6 8/12/2008 10:37:34.552474 AM 80

12 DTE 7 8/12/2008 10:37:34.553626 AM 6e

13 DTE 8 8/12/2008 10:37:34.554773 AM 80

14 DTE 9 8/12/2008 10:37:34.555924 AM 72

15 DTE 10 8/12/2008 10:37:34.557069 AM 80

16 DTE 11 8/12/2008 10:37:34.558217 AM 6c

17 DTE 12 8/12/2008 10:37:34.559369 AM 80

18 DTE 13 8/12/2008 10:37:34.560515 AM 2b

19 DTE 14 8/12/2008 10:37:34.561665 AM 80

20 DTE 15 8/12/2008 10:37:34.562812 AM 2a

21 DTE 16 8/12/2008 10:37:42.957722 AM 80

22 DTE 17 8/12/2008 10:37:42.959037 AM 52

23 DTE 18 8/12/2008 10:37:42.960177 AM 01

24 DTE 19 8/12/2008 10:37:46.461766 AM 80

25 DTE 20 8/12/2008 10:37:46.462758 AM 75

26 DTE 21 8/12/2008 10:37:46.463883 AM 80

27 DTE 22 8/12/2008 10:37:46.465202 AM 6e

28 DTE 23 8/12/2008 10:37:46.466349 AM 80

29 DTE 24 8/12/2008 10:37:46.467494 AM 72

30 DTE 25 8/12/2008 10:37:46.468646 AM 80

31 DTE 26 8/12/2008 10:37:46.469792 AM 6c

32 DTE 27 8/12/2008 10:37:46.470945 AM 80

33 DTE 28 8/12/2008 10:37:46.472092 AM 2b

34 DTE 29 8/12/2008 10:37:46.473243 AM 80

35 DTE 30 8/12/2008 10:37:46.474388 AM 2a

36 DTE 31 8/12/2008 10:37:49.029667 AM 80

37 DTE 32 8/12/2008 10:37:49.030811 AM 4e

38 DTE 33 8/12/2008 10:37:49.031947 AM 01

39 DTE 34 8/12/2008 10:37:52.085598 AM 80

40 DTE 35 8/12/2008 10:37:52.086739 AM 75

41 DTE 36 8/12/2008 10:37:52.087893 AM 80

42 DTE 37 8/12/2008 10:37:52.089037 AM 6e

43 DTE 38 8/12/2008 10:37:52.090183 AM 80

44 DTE 39 8/12/2008 10:37:52.091336 AM 72

45 DTE 40 8/12/2008 10:37:52.092482 AM 80

46 DTE 41 8/12/2008 10:37:52.093634 AM 6c

47 DTE 42 8/12/2008 10:37:52.094780 AM 80

48 DTE 43 8/12/2008 10:37:52.095933 AM 2b

49 DTE 44 8/12/2008 10:37:52.097077 AM 80

50 DTE 45 8/12/2008 10:37:52.098230 AM 2a

51 DTE 46 8/12/2008 10:37:55.933444 AM 80

52 DTE 47 8/12/2008 10:37:55.934578 AM 4c

53 DTE 48 8/12/2008 10:37:55.935724 AM 01

54 DTE 49 8/12/2008 10:37:58.573386 AM 80

55 DTE 50 8/12/2008 10:37:58.574533 AM 75

56 DTE 51 8/12/2008 10:37:58.575678 AM 80

57 DTE 52 8/12/2008 10:37:58.576817 AM 6e

58 DTE 53 8/12/2008 10:37:58.577970 AM 80

59 DTE 54 8/12/2008 10:37:58.579115 AM 72

60 DTE 55 8/12/2008 10:37:58.580184 AM 80

61 DTE 56 8/12/2008 10:37:58.581407 AM 6c

62 DTE 57 8/12/2008 10:37:58.582560 AM 80

63 DTE 58 8/12/2008 10:37:58.583699 AM 2b

64 DTE 59 8/12/2008 10:37:58.584852 AM 80

65 DTE 60 8/12/2008 10:37:58.585990 AM 2a

66 DTE 61 8/12/2008 10:38:02.613210 AM 80

67 DTE 62 8/12/2008 10:38:02.614357 AM 3b

68 DTE 63 8/12/2008 10:38:03.853004 AM 80

69 DTE 64 8/12/2008 10:38:03.854149 AM 2b

70 DTE 65 8/12/2008 10:38:06.317123 AM 80

71 DTE 66 8/12/2008 10:38:06.318271 AM 75

72 DTE 67 8/12/2008 10:38:06.319408 AM 80

73 DTE 68 8/12/2008 10:38:06.320556 AM 6e

74 DTE 69 8/12/2008 10:38:06.321702 AM 80

75 DTE 70 8/12/2008 10:38:06.322847 AM 72

76 DTE 71 8/12/2008 10:38:06.324000 AM 80

77 DTE 72 8/12/2008 10:38:06.325139 AM 6c

78 DTE 73 8/12/2008 10:38:06.326289 AM 80

79 DTE 74 8/12/2008 10:38:06.327438 AM 2b

80 DTE 75 8/12/2008 10:38:06.328584 AM 80

81 DTE 76 8/12/2008 10:38:06.329729 AM 2a

82 DTE 77 8/12/2008 10:38:09.828933 AM 80

83 DTE 78 8/12/2008 10:38:09.830075 AM 3a

84 DTE 79 8/12/2008 10:38:11.756732 AM 80

85 DTE 80 8/12/2008 10:38:11.757873 AM 2a

86 DTE 81 8/12/2008 10:38:16.244706 AM 80

87 DTE 82 8/12/2008 10:38:16.245670 AM 75

88 DTE 83 8/12/2008 10:38:16.246989 AM 80

89 DTE 84 8/12/2008 10:38:16.248134 AM 6e

90 DTE 85 8/12/2008 10:38:16.249273 AM 80

91 DTE 86 8/12/2008 10:38:16.250426 AM 72

92 DTE 87 8/12/2008 10:38:16.251527 AM 80

93 DTE 88 8/12/2008 10:38:16.252717 AM 6c

94 DTE 89 8/12/2008 10:38:16.253864 AM 80

95 DTE 90 8/12/2008 10:38:16.255009 AM 2b

96 DTE 91 8/12/2008 10:38:16.256156 AM 80

97 DTE 92 8/12/2008 10:38:16.257308 AM 2a

98 DTE 93 8/12/2008 10:38:43.651617 AM 80

99 DTE 94 8/12/2008 10:38:43.652760 AM 54

100 DTE 95 8/12/2008 10:38:51.283358 AM 80

101 DTE 96 8/12/2008 10:38:51.284505 AM 47

102 DTE 97 8/12/2008 10:38:51.285644 AM 75

103 DTE 98 8/12/2008 10:38:57.363363 AM 80

104 DTE 99 8/12/2008 10:38:57.364505 AM 5c

105 DTE 100 8/12/2008 10:38:59.667069 AM 80

106 DTE 101 8/12/2008 10:38:59.668042 AM 7c

107 DTE 102 8/12/2008 10:39:02.163104 AM 80

108 DTE 103 8/12/2008 10:39:02.164250 AM 5b

109 DTE 104 8/12/2008 10:39:04.410915 AM 80

110 DTE 105 8/12/2008 10:39:04.412058 AM 7b

111 DTE 106 8/12/2008 10:39:07.146955 AM 80

112 DTE 107 8/12/2008 10:39:07.148093 AM 5d

113 DTE 108 8/12/2008 10:39:09.338722 AM 80

114 DTE 109 8/12/2008 10:39:09.339869 AM 7d

115 DTE 110 8/12/2008 10:39:19.210390 AM 80

116 DTE 111 8/12/2008 10:39:19.211531 AM 41

117 DTE 112 8/12/2008 10:39:24.554281 AM 80

118 DTE 113 8/12/2008 10:39:24.555410 AM 61

119 DTE 114 8/12/2008 10:39:31.818007 AM 80

120 DTE 115 8/12/2008 10:39:31.819143 AM 3c

121 DTE 116 8/12/2008 10:39:37.337748 AM 80

122 DTE 117 8/12/2008 10:39:37.338887 AM 3d

123 DTE 118 8/12/2008 10:39:43.873528 AM 80

124 DTE 119 8/12/2008 10:39:43.874677 AM 4d

125 DTE 120 8/12/2008 10:39:47.953386 AM 80

126 DTE 121 8/12/2008 10:39:47.954527 AM 6d

127 DTE 122 8/12/2008 10:39:54.985137 AM 80

128 DTE 123 8/12/2008 10:39:54.986278 AM 3e

129 DTE 124 8/12/2008 10:40:00.905020 AM 80

130 DTE 125 8/12/2008 10:40:00.906094 AM 3f

131 DTE 126 8/12/2008 10:40:08.600665 AM 80

132 DTE 127 8/12/2008 10:40:08.601812 AM 42

133 DTE 128 8/12/2008 10:40:08.602952 AM 46

134 DTE 129 8/12/2008 10:40:14.200470 AM 80

135 DTE 130 8/12/2008 10:40:14.201618 AM 42

136 DTE 131 8/12/2008 10:40:14.202756 AM 47

137 DTE 132 8/12/2008 10:40:20.456362 AM 80

138 DTE 133 8/12/2008 10:40:20.457503 AM 47

139 DTE 134 8/12/2008 10:40:20.458642 AM 01

140 DTE 135 8/12/2008 10:40:25.904089 AM 80

1.2 FixVCL01

FixVCL01 is used to reformat the output of makesecs processed captures on a VCL type system. The result is a more clearly understood version of what was going on.

1. This filter is written in Flex.
2. This filter is suitable for use with VCL's Protocols only.
3. This filter requires preprocessing by MAKESECS.
4. This filter is sensitive to having DCE (for data coming from the Keyboard) and DTE (for data coming from the Dome) having data coming from the Headend/Keyboard or the Dome/Camera.
5. **Listing of: hvcl.0ms a typical input file.**

```

1 $ Id: makesecs.l,v 1.10 2008-02-13 09:08:18-08 Hamilton Exp Hamilton $
2 $Header: d:/Binder4/sda2/RCS/Hvcl.0ms,v 1.1 2008-08-13 10:46:05-07 Hamilton Exp Hamilton $
3 FTS capture buffer (8/12/2008 10:46:17 AM)
4 Event 1 (8/12/2008 10:37:30.678513 AM) through
5 Event 202 (8/12/2008 10:45:26.871704 AM)
6
7
8 1,      1: DTE      1      0.000000  0.000000 80
9 1,      2: DTE      2      0.001142  0.001142 55
10 1,      3: DTE      3      0.002282  0.001140 01
11 1,      4: DTE      4      3.871669  3.869387 80
12 1,      5: DTE      5      3.872817  0.001148 75
13 1,      6: DTE      6      3.873961  0.001144 80
14 1,      7: DTE      7      3.875113  0.001152 6e
15 1,      8: DTE      8      3.876260  0.001147 80
16 1,      9: DTE      9      3.877411  0.001151 72
17 1,     10: DTE     10      3.878556  0.001145 80
18 1,     11: DTE     11      3.879704  0.001148 6c
19 1,     12: DTE     12      3.880856  0.001152 80
20 1,     13: DTE     13      3.882002  0.001146 2b

```

6. **Listing of: hvcl.1vc a typical output file.**

```

1 $ Id: makesecs.l,v 1.10 2008-02-13 09:08:18-08 Hamilton Exp Hamilton $
2 $Header: d:/Binder4/sda2/RCS/Hvcl.1vc,v 1.1 2008-08-13 10:46:14-07 Hamilton Exp Hamilton $
3 FTS capture buffer (8/12/2008 10:46:17 AM)
4 Event 1 (8/12/2008 10:37:30.678513 AM) through
5 Event 202 (8/12/2008 10:45:26.871704 AM)
6
7
8 1,      1: DTE      1      0.000000  0.000000 80 55 01
9 1,      4: DTE      4      3.871669  3.869387 80 75
10 1,      6: DTE      6      3.873961  0.001144 80 6e
11 1,      8: DTE      8      3.876260  0.001147 80 72
12 1,     10: DTE     10      3.878556  0.001145 80 6c
13 1,     12: DTE     12      3.880856  0.001152 80 2b
14 1,     14: DTE     14      3.883152  0.001150 80 2a
15 1,     16: DTE     16     12.279209  8.394910 80 52 01
16 1,     19: DTE     19     15.783253  3.501589 80 75
17 1,     21: DTE     21     15.785370  0.001125 80 6e
18 1,     23: DTE     23     15.787836  0.001147 80 72
19 1,     25: DTE     25     15.790133  0.001152 80 6c
20 1,     27: DTE     27     15.792432  0.001153 80 2b

```

1.2.1 Listing of FixVCL01.1

```

1  %{
2  //$ Id: makesecs.1,v 1.10 2008-02-13 09:08:18-08 Hamilton Exp Hamilton $
3  //$Header: d:/Binder4/sda2/RCS/FixVCL01.1,v 1.2 2008-08-13 09:55:59-07 Hamilton Exp Hamilton $
4  //FTS capture buffer (6/26/2008 8:56:32 AM)
5  //Event 1 (6/26/2008 7:55:41.927698 AM) through
6  //Event 51,931 (6/26/2008 8:56:14.587862 AM)
7  //
8  //
9  //      1,      1: DTE      1      0.000000      0.000000 80
10 //      1,      2: DTE      2      0.002081      0.002081 5a
11 //      1,      3: DTE      3      0.010063      0.007982 80
12 //
13 //There were a total of      51931 bytes transferred
14 //
15 //There were a total of      0 DCE bytes transferred
16 //The first DCE byte came in at 0.000000 seconds from the start of data collection
17 //The last DCE byte was at 0.000000 seconds from the start of data collection
18 //
19 //There were a total of      51931 DTE bytes transferred
20 //The first DTE byte came in at 0.000000 seconds from the start of data collection
21 //The last DTE byte was at 3632.660164 seconds from the start of data collection
22 //
23 //123456789 123456789 123456789 123456789 123456789 123456789
24 //
25 // $Header: d:/Binder4/sda2/RCS/FixVCL01.1,v 1.2 2008-08-13 09:55:59-07 Hamilton Exp Hamilton $
26 // FIXVCL01 is used to reformat the output of makesecs processed captures
27 //      on a VCL type system. The result is a more clearly understood
28 //      version of what was going on.
29 //
30 #include <string.h>
31 #include <stdio.h>
32 #include <stdlib.h>
33 #undef yywrap
34 int i, j;
35 %}
36 %x INCMND
37 %%
38 ^\n$                |
39 "$".*\n             |
40 "FTS".*\n           |
41 "Event".*\n         |
42 "The".*\n           ECHO;
43
44 .* " [8-9a-f] [0-9a-f]          fprintf(yyout,"%s",yytext); BEGIN INCMND;
45 <INCMND>.* " [0-7] [0-9a-f]$    {i = strlen(yytext);
46                                fprintf(yyout," %c%c",yytext[i-2],yytext[i-1]);
47                                }
48 <INCMND>.* " [8-9a-f] [0-9a-f]$  {i = strlen(yytext);
49                                fprintf(yyout,"\n");
50                                for (j = 0; j < i; j++)
51                                    fprintf(yyout,"%c",yytext[j]);
52                                }
53 <INCMND>"The".*\n              fprintf(yyout,"\n\n"); ECHO; BEGIN 0;
54 <INCMND>\n                    ;
55
56 .|\n      ECHO;
57 %%
58 // yywrap is for End Of File processing, 1 = done
59 int yywrap(void)
60 {
61     return 1;
62 }
63
64 main(int argc, char *argv[])
65 {
66     fprintf(stderr,"$Id: FixVCL01.1,v 1.2 2008-08-13 09:55:59-07 Hamilton Exp Hamilton $\n");
67
68     // Do we have to deal with stdin/stdout?

```

```

69         // 3 = one for the program name and one each for input and output names
70         if (argc == 3) {
71             // Nope
72             // Get over the program, etc., name
73             argc--;
74             argv++;
75             yyin = fopen(argv[0], "r");
76             if (yyin == NULL) {
77                 fprintf(stderr, "\aCould not open \"%s\" for reading, quitting",
78                     argv[0]);
79                 exit(EXIT_FAILURE);
80             }
81
82             // Now get over the input file name and get to the output file name
83             argc--;
84             argv++;
85             yyout = fopen(argv[0], "w");
86             if (yyout == NULL) {
87                 fprintf(stderr, "\aCould not open \"%s\" for writing, quitting",
88                     argv[0]);
89                 exit(EXIT_FAILURE);
90             }
91         }
92         else {
93             // Woops we are using std... type io
94             yyin = stdin;
95             yyout = stdout;
96         }
97
98         yylex();
99         exit(EXIT_SUCCESS);
100     }
101
102     // $Log: FixVCL01.1,v $
103     // Revision 1.2  2008-08-13 09:55:59-07  Hamilton
104     // Normal end of day data saving
105     //
106     // Revision 1.1  2008-07-02 06:53:26-07  Hamilton
107     // Initial revision
108     //
109     // Revision 1.10  2007-02-08 06:45:52-08  Hamilton
110     // Normal end of day data saving
111     //
112

```

1.3 FixVCL02

FixVCL02 is used to process files cleaned up by FixVCL01 with annotations as to the command type.

1. This filter is written in Flex.
2. This filter is suitable for use with VCL's Protocols only.
3. This filter requires preprocessing by MAKESECS.
4. This filter is sensitive to having DCE (for data coming from the Keyboard) and DTE (for data coming from the Dome) having data coming from the Headend/Keyboard or the Dome/Camera.
5. **Listing of: hvcl.1vc a typical input file.**

```

1 $ Id: makesecs.1,v 1.10 2008-02-13 09:08:18-08 Hamilton Exp Hamilton $
2 $Header: d:/Binder4/sda2/RCS/Hvcl.1vc,v 1.1 2008-08-13 10:46:14-07 Hamilton Exp Hamilton $
3 FTS capture buffer (8/12/2008 10:46:17 AM)
4 Event 1 (8/12/2008 10:37:30.678513 AM) through
5 Event 202 (8/12/2008 10:45:26.871704 AM)
6
7
8      1,      1: DTE      1      0.000000  0.000000 80 55 01
9      1,      4: DTE      4      3.871669  3.869387 80 75
10     1,      6: DTE      6      3.873961  0.001144 80 6e
11     1,      8: DTE      8      3.876260  0.001147 80 72
12     1,     10: DTE     10      3.878556  0.001145 80 6c
13     1,     12: DTE     12      3.880856  0.001152 80 2b
14     1,     14: DTE     14      3.883152  0.001150 80 2a
15     1,     16: DTE     16     12.279209  8.394910 80 52 01
16     1,     19: DTE     19     15.783253  3.501589 80 75
17     1,     21: DTE     21     15.785370  0.001125 80 6e
18     1,     23: DTE     23     15.787836  0.001147 80 72
19     1,     25: DTE     25     15.790133  0.001152 80 6c
20     1,     27: DTE     27     15.792432  0.001153 80 2b

```

6. **Listing of: hvcl.2vc a typical output file.**

```

1 $ Id: makesecs.1,v 1.10 2008-02-13 09:08:18-08 Hamilton Exp Hamilton $
2 $Header: d:/Binder4/sda2/RCS/Hvcl.2vc,v 1.1 2008-08-13 10:46:18-07 Hamilton Exp Hamilton $
3 FTS capture buffer (8/12/2008 10:46:17 AM)
4 Event 1 (8/12/2008 10:37:30.678513 AM) through
5 Event 202 (8/12/2008 10:45:26.871704 AM)
6
7
8      1,      1: DTE      1      0.000000  0.000000 80 55  1 Tilt Up  01
9      1,      4: DTE      4      3.871669  3.869387 80 75  1 Stop Up
10     1,      6: DTE      6      3.873961  0.001144 80 6e  1 Stop Down
11     1,      8: DTE      8      3.876260  0.001147 80 72  1 Stop Right
12     1,     10: DTE     10      3.878556  0.001145 80 6c  1 Stop Left
13     1,     12: DTE     12      3.880856  0.001152 80 2b  1 Zoom CCW End
14     1,     14: DTE     14      3.883152  0.001150 80 2a  1 Zoom CW End
15     1,     16: DTE     16     12.279209  8.394910 80 52  1 Pan Right 01
16     1,     19: DTE     19     15.783253  3.501589 80 75  1 Stop Up
17     1,     21: DTE     21     15.785370  0.001125 80 6e  1 Stop Down
18     1,     23: DTE     23     15.787836  0.001147 80 72  1 Stop Right
19     1,     25: DTE     25     15.790133  0.001152 80 6c  1 Stop Left
20     1,     27: DTE     27     15.792432  0.001153 80 2b  1 Zoom CCW End

```

1.3.1 Listing of FixVCL02.1

```

1  %{
2  //$ Id: makesecs.1,v 1.10 2008-02-13 09:08:18-08 Hamilton Exp Hamilton $
3  //$Header: d:/Binder4/sda2/RCS/FixVCL02.1,v 1.1 2008-08-13 09:56:55-07 Hamilton Exp Hamilton $
4  //FTS capture buffer (8/12/2008 10:46:17 AM)
5  //Event 1 (8/12/2008 10:37:30.678513 AM) through
6  //Event 202 (8/12/2008 10:45:26.871704 AM)
7  //
8  //      1,      1: DTE      1      0.000000  0.000000 80 55 01
9  //      1,      4: DTE      4      3.871669  3.869387 80 75
10 //
11 //There were a total of      202 bytes transferred
12 //
13 //There were a total of      0 DCE bytes transferred
14 //The first DCE byte came in at 0.000000 seconds from the start of data collection
15 //The last DCE byte was at 0.000000 seconds from the start of data collection
16 //
17 //There were a total of      202 DTE bytes transferred
18 //The first DTE byte came in at 0.000000 seconds from the start of data collection
19 //The last DTE byte was at 476.193191 seconds from the start of data collection
20 //
21 // $Header: d:/Binder4/sda2/RCS/FixVCL02.1,v 1.1 2008-08-13 09:56:55-07 Hamilton Exp Hamilton $
22 // FIXVCL02 is used to process files cleaned up by FIXVCL01 for annotating.
23 #include <stdio.h>
24 #include <string.h>
25 #include <stdlib.h>
26 #undef yywrap
27 void CamAddr(void);
28 %}
29 %x PRINTSPEED
30 %%
31
32 " "[8-9a-f]{1}[0-9a-f]{1}" 46 00" ECHO; fprintf(yyout," Camera Query");
33
34 " "[8-9a-f]{1}[0-9a-f]{1}" 2a" ECHO; CamAddr(); fprintf(yyout,"Zoom CW End");
35 " "[8-9a-f]{1}[0-9a-f]{1}" 2b" ECHO; CamAddr(); fprintf(yyout,"Zoom CCW End");
36 " "[8-9a-f]{1}[0-9a-f]{1}" 2c" ECHO; CamAddr(); fprintf(yyout,"Focus Near End");
37 " "[8-9a-f]{1}[0-9a-f]{1}" 2d" ECHO; CamAddr(); fprintf(yyout,"Focus Far End");
38 " "[8-9a-f]{1}[0-9a-f]{1}" 2e" ECHO; CamAddr(); fprintf(yyout,"Open End");
39 " "[8-9a-f]{1}[0-9a-f]{1}" 2f" ECHO; CamAddr(); fprintf(yyout,"Close End");
40 " "[8-9a-f]{1}[0-9a-f]{1}" 3a" ECHO; CamAddr(); fprintf(yyout,"Zoom CW Start");
41 " "[8-9a-f]{1}[0-9a-f]{1}" 3b" ECHO; CamAddr(); fprintf(yyout,"Zoom CCW Start");
42 " "[8-9a-f]{1}[0-9a-f]{1}" 3c" ECHO; CamAddr(); fprintf(yyout,"Focus Near Start");
43 " "[8-9a-f]{1}[0-9a-f]{1}" 3d" ECHO; CamAddr(); fprintf(yyout,"Focus Far Start");
44 " "[8-9a-f]{1}[0-9a-f]{1}" 3e" ECHO; CamAddr(); fprintf(yyout,"Open Start");
45 " "[8-9a-f]{1}[0-9a-f]{1}" 3f" ECHO; CamAddr(); fprintf(yyout,"Close Start");
46 " "[8-9a-f]{1}[0-9a-f]{1}" 41" ECHO; CamAddr(); fprintf(yyout,"Auto Focus Off");
47 " "[8-9a-f]{1}[0-9a-f]{1}" 42" ECHO; CamAddr(); fprintf(yyout,"Call Preset");BEGIN PRINTSPEED;
48 " "[8-9a-f]{1}[0-9a-f]{1}" 47" ECHO; CamAddr(); fprintf(yyout,"Set Preset");BEGIN PRINTSPEED;
49 " "[8-9a-f]{1}[0-9a-f]{1}" 48" ECHO; CamAddr(); fprintf(yyout,"Aux Start");
50 " "[8-9a-f]{1}[0-9a-f]{1}" 4c" ECHO; CamAddr(); fprintf(yyout,"Pan Left "); BEGIN PRINTSPEED;
51 " "[8-9a-f]{1}[0-9a-f]{1}" 4d" ECHO; CamAddr(); fprintf(yyout,"Auto Iris Off");
52 " "[8-9a-f]{1}[0-9a-f]{1}" 4e" ECHO; CamAddr(); fprintf(yyout,"Tilt Down"); BEGIN PRINTSPEED;
53 " "[8-9a-f]{1}[0-9a-f]{1}" 52" ECHO; CamAddr(); fprintf(yyout,"Pan Right"); BEGIN PRINTSPEED;
54 " "[8-9a-f]{1}[0-9a-f]{1}" 54" ECHO; CamAddr(); fprintf(yyout,"180 degree flip");
55 " "[8-9a-f]{1}[0-9a-f]{1}" 55" ECHO; CamAddr(); fprintf(yyout,"Tilt Up "); BEGIN PRINTSPEED;
56 " "[8-9a-f]{1}[0-9a-f]{1}" 57" ECHO; CamAddr(); fprintf(yyout,"Aux Off"); BEGIN PRINTSPEED;
57 " "[8-9a-f]{1}[0-9a-f]{1}" 5a" ECHO; CamAddr(); fprintf(yyout,"Aux End");
58 " "[8-9a-f]{1}[0-9a-f]{1}" 5b" ECHO; CamAddr(); fprintf(yyout,"Wipe start (key down)");
59 " "[8-9a-f]{1}[0-9a-f]{1}" 5c" ECHO; CamAddr(); fprintf(yyout,"Wash first push");
60 " "[8-9a-f]{1}[0-9a-f]{1}" 5d" ECHO; CamAddr(); fprintf(yyout,"Lamp On");
61 " "[8-9a-f]{1}[0-9a-f]{1}" 5e" ECHO; CamAddr(); fprintf(yyout,"Auto Pan Start"); BEGIN PRINTSPEED;
62 " "[8-9a-f]{1}[0-9a-f]{1}" 61" ECHO; CamAddr(); fprintf(yyout,"Auto Focus On");
63 " "[8-9a-f]{1}[0-9a-f]{1}" 6b" ECHO; CamAddr(); fprintf(yyout,"Reset");
64 " "[8-9a-f]{1}[0-9a-f]{1}" 6c" ECHO; CamAddr(); fprintf(yyout,"Stop Left");
65 " "[8-9a-f]{1}[0-9a-f]{1}" 6d" ECHO; CamAddr(); fprintf(yyout,"Auto Iris On");
66 " "[8-9a-f]{1}[0-9a-f]{1}" 6e" ECHO; CamAddr(); fprintf(yyout,"Stop Down");
67 " "[8-9a-f]{1}[0-9a-f]{1}" 72" ECHO; CamAddr(); fprintf(yyout,"Stop Right");
68 " "[8-9a-f]{1}[0-9a-f]{1}" 75" ECHO; CamAddr(); fprintf(yyout,"Stop Up");

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69 " "[8-9a-f]{1}[0-9a-f]{1}" 77" ECHO; CamAddr(); fprintf(yyout,"Aux On"); BEGIN PRINTSPEED;
70 " "[8-9a-f]{1}[0-9a-f]{1}" 7b" ECHO; CamAddr(); fprintf(yyout,"Wipe end (key up)");
71 " "[8-9a-f]{1}[0-9a-f]{1}" 7c" ECHO; CamAddr(); fprintf(yyout,"Wash second push");
72 " "[8-9a-f]{1}[0-9a-f]{1}" 7d" ECHO; CamAddr(); fprintf(yyout,"Lamp Off");
73 " "[8-9a-f]{1}[0-9a-f]{1}" 7e" ECHO; CamAddr(); fprintf(yyout,"Auto Pan End");
74
75 <PRINTSPEED>" "[0-9a-f]{2} ECHO; BEGIN 0;
76
77 .|\n      ECHO;
78 %%
79 void CamAddr(void)
80 {
81     char temp[3];
82     long i;
83
84     i = strlen(yytext);
85     temp[0] = yytext[i-5];
86     temp[1] = yytext[i-4];
87     temp[2] = '\0';
88     i = strtol(temp,NULL,16) - 0x80;
89     fprintf(yyout,"%4d ",i+1);
90 }
91
92
93
94
95
96
97
98
99
100
101 // yywrap is for End Of File processing, 1 = done
102 int yywrap(void)
103 {
104     return 1;
105 }
106
107 main(int argc, char *argv[])
108 {
109     fprintf(stderr,"%Id: FixVCL02.1,v 1.1 2008-08-13 09:56:55-07 Hamilton Exp Hamilton $\n");
110
111     // Do we have to deal with stdin/stdout?
112     // 3 = one for the program name and one each for input and output names
113     if (argc == 3) {
114         // Nope
115         // Get over the program, etc., name
116         argc--;
117         argv++;
118         yyin = fopen(argv[0],"r");
119         if (yyin == NULL) {
120             fprintf(stderr,"\aCould not open \"%s\" for reading, quitting",
121                 argv[0]);
122             exit(EXIT_FAILURE);
123         }
124
125         // Now get over the input file name and get to the output file name
126         argc--;
127         argv++;
128         yyout = fopen(argv[0],"w");
129         if (yyout == NULL) {
130             fprintf(stderr,"\aCould not open \"%s\" for writing, quitting",
131                 argv[0]);
132             exit(EXIT_FAILURE);
133         }
134     }
135     else {
136         // Woops we are using std... type io
137         yyin = stdin;
138         yyout = stdout;
139     }
140

```

```
141         yylex();
142         exit(EXIT_SUCCESS);
143     }
144
145     // $Log: FixVCL02.1,v $
146     // Revision 1.1  2008-08-13 09:56:55-07  Hamilton
147     // Initial revision
148     //
149     // Revision 1.4  2008-07-02 07:02:17-07  Hamilton
150     // Normal end of day data saving
151     //
152     // Revision 1.3  2007-08-14 07:45:26-07  Hamilton
153     // Normal end of day data saving
154     //
155     // Revision 1.2  2007-08-13 14:03:28-07  Hamilton
156     // Normal middle of day data saving.
157     //
158     // Revision 1.1  2007-08-13 12:57:07-07  Hamilton
159     // Initial revision
160     //
161     // Revision 1.10 2007-02-08 06:45:52-08  Hamilton
162     // Normal end of day data saving
163     //
164
```

Index

DCE, 5, 8
DTE, 5, 8

FixVCL01, 5, 8
FixVCL02, 8

MakeSecs, 5, 8

VCL, 5, 8