

Various Filters and Techniques for:

Serial Data Analysis

Part 2, Cohu Protocols

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¹\$Header: d:/Binder4/sda2/RCS/Sda2Cohu.tex,v 1.3 2008-06-10 09:20:53-07 Hamilton Exp Hamilton \$

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1 Filters for Cohu Protocol Processing

1.1 .BAT files for processing Cohu data

1.1.1 JJJ.BAT

```

1 @echo off
2 rem $Header: d:/Binder4/sda2/RCS/Jjj.bat,v 1.3 2008-03-05 10:35:45-08 Hamilton Exp Hamilton $
3 echo Processing consists of: MakeSecs, OneLine, FixCohu1, FixCohu2,
4 echo Fix1Line, NoEndF8, 4CI and ELnIt
5 makesecs %1.txt %1.ms
6 rem cohufix1 %1.makesecs %1.cohufix
7 oneline %1.ms %1.one
8 fixcohu1 %1.one %1.fx1
9 del %1.one
10 fixcohu2 %1.fx1 %1.fx2
11 del %1.fx1
12 fix1line %1.fx2 %1.f11
13 del %1.fx2
14 noendf8 %1.f11 %1.nf8
15 del %1.f11
16 4ci %1.nf8 %1.4ci
17 elnit %1.4ci %1.lnn
18 del %1.4ci
19 l %1.nf8

```

²\$Header: d:/Binder4/sda2/RCS/Cohu.inc,v 1.5 2008-06-10 09:20:30-07 Hamilton Exp Hamilton \$

1.1.2 ccsamp.1 Test file

1 FTS capture buffer (4/10/2007 11:51:23 AM)
 2 Event 1 (4/10/2007 11:43:35.560340 AM) through
 3 Event 16,806 (4/10/2007 11:51:03.703768 AM)

4

5 Sd Event# Timestamp Hx

6 DCE 1 4/10/2007 11:43:35.560340 AM f8

7 DCE 2 4/10/2007 11:43:35.561376 AM 01

8 DCE 3 4/10/2007 11:43:35.562411 AM 63

9 DCE 4 4/10/2007 11:43:35.563453 AM 44

10 DCE 5 4/10/2007 11:43:35.564488 AM 53

11 DCE 6 4/10/2007 11:43:35.565529 AM 85

12 DTE 7 4/10/2007 11:43:35.566687 AM 06

13 DTE 8 4/10/2007 11:43:35.576225 AM f8

14 DTE 9 4/10/2007 11:43:35.577273 AM 01

15 DTE 10 4/10/2007 11:43:35.578321 AM 63

16 DTE 11 4/10/2007 11:43:35.579369 AM 57

17 DTE 12 4/10/2007 11:43:35.580418 AM 30

18 DTE 13 4/10/2007 11:43:35.581466 AM 53

19 DTE 14 4/10/2007 11:43:35.582514 AM 30

20 DTE 15 4/10/2007 11:43:35.583562 AM 59

21 DTE 16 4/10/2007 11:43:35.584610 AM 30

22 DTE 17 4/10/2007 11:43:35.585657 AM 4d

23 DTE 18 4/10/2007 11:43:35.586707 AM 30

24 DTE 19 4/10/2007 11:43:35.587754 AM 44

25 DTE 20 4/10/2007 11:43:35.588803 AM 30

26 DTE 21 4/10/2007 11:43:35.589851 AM 4c

27 DTE 22 4/10/2007 11:43:35.590899 AM 32

28 DTE 23 4/10/2007 11:43:35.591941 AM 41

29 DTE 24 4/10/2007 11:43:35.592989 AM 30

30 DTE 25 4/10/2007 11:43:35.593970 AM 58

31 DTE 26 4/10/2007 11:43:35.594920 AM 30

32 DTE 27 4/10/2007 11:43:35.595966 AM 48

33 DTE 28 4/10/2007 11:43:35.597015 AM 49

34 DTE 29 4/10/2007 11:43:35.598063 AM 50

35 DTE 30 4/10/2007 11:43:35.599111 AM 30

36 DTE 31 4/10/2007 11:43:35.600160 AM 76

37 DTE 32 4/10/2007 11:43:35.601208 AM 30

38 DTE 33 4/10/2007 11:43:35.602256 AM 70

39 DTE 34 4/10/2007 11:43:35.603304 AM 30

40 DTE 35 4/10/2007 11:43:35.604353 AM 46

41 DTE 36 4/10/2007 11:43:35.605570 AM 6f

42 DTE 37 4/10/2007 11:43:35.606615 AM 43

43 DTE 38 4/10/2007 11:43:35.607663 AM 33

44 DTE 39 4/10/2007 11:43:35.608712 AM 6e

45 DTE 40 4/10/2007 11:43:35.609759 AM 31

46 DTE 41 4/10/2007 11:43:35.610808 AM 73

47 DTE 42 4/10/2007 11:43:35.611857 AM 6f

48 DTE 43 4/10/2007 11:43:35.612904 AM 31

49 DTE 44 4/10/2007 11:43:35.613823 AM 8d

50 DCE 45 4/10/2007 11:43:35.619995 AM 06

51 DCE 46 4/10/2007 11:43:36.565198 AM f8

52 DCE 47 4/10/2007 11:43:36.566233 AM 01

53 DCE 48 4/10/2007 11:43:36.567275 AM 63

54 DCE 49 4/10/2007 11:43:36.568309 AM 44

55 DCE 50 4/10/2007 11:43:36.569351 AM 53

56 DCE 51 4/10/2007 11:43:36.570386 AM 85

57 DTE 52 4/10/2007 11:43:36.571629 AM 06

58 DTE 53 4/10/2007 11:43:36.580430 AM f8

59 DTE 54 4/10/2007 11:43:36.581477 AM 01

60 DTE 55 4/10/2007 11:43:36.582525 AM 63

61 DTE 56 4/10/2007 11:43:36.583574 AM 57

62 DTE 57 4/10/2007 11:43:36.584623 AM 30

63 DTE 58 4/10/2007 11:43:36.585670 AM 53

64 DTE 59 4/10/2007 11:43:36.586588 AM 30

65 DTE 60 4/10/2007 11:43:36.587768 AM 59

66 DTE 61 4/10/2007 11:43:36.588814 AM 30

67 DTE 62 4/10/2007 11:43:36.589864 AM 4d

68 DTE 63 4/10/2007 11:43:36.590912 AM 30

69 DTE 64 4/10/2007 11:43:36.591959 AM 44

70 DTE 65 4/10/2007 11:43:36.593009 AM 30

71 DTE 66 4/10/2007 11:43:36.594056 AM 4c

72 DTE 67 4/10/2007 11:43:36.595114 AM 32

73 DTE 68 4/10/2007 11:43:36.595988 AM 41

74 DTE 69 4/10/2007 11:43:36.597034 AM 30

75 DTE 70 4/10/2007 11:43:36.598082 AM 58

76 DTE 71 4/10/2007 11:43:36.599130 AM 30

77 DTE 72 4/10/2007 11:43:36.600178 AM 48

78 DTE 73 4/10/2007 11:43:36.601227 AM 49

79 DTE 74 4/10/2007 11:43:36.602274 AM 50

80 DTE 75 4/10/2007 11:43:36.603322 AM 30

81 DTE 76 4/10/2007 11:43:36.604372 AM 76

82 DTE 77 4/10/2007 11:43:36.605419 AM 30

83 DTE 78 4/10/2007 11:43:36.606637 AM 70

84 DTE 79 4/10/2007 11:43:36.607684 AM 30

85 DTE 80 4/10/2007 11:43:36.608733 AM 46

86 DTE 81 4/10/2007 11:43:36.609779 AM 6f

87 DTE 82 4/10/2007 11:43:36.610827 AM 43

88 DTE 83 4/10/2007 11:43:36.611875 AM 33

89 DTE 84 4/10/2007 11:43:36.612917 AM 6e

90 DTE 85 4/10/2007 11:43:36.613965 AM 31

91 DTE 86 4/10/2007 11:43:36.615012 AM 73

92 DTE 87 4/10/2007 11:43:36.616062 AM 6f

93 DTE 88 4/10/2007 11:43:36.617116 AM 31

94 DTE 89 4/10/2007 11:43:36.618166 AM 8d

95 DCE 90 4/10/2007 11:43:36.624253 AM 06

96 DCE 91 4/10/2007 11:43:37.563251 AM f8

97 DCE 92 4/10/2007 11:43:37.564272 AM 01

98 DCE 93 4/10/2007 11:43:37.565313 AM 63

99 DCE 94 4/10/2007 11:43:37.566349 AM 44

100 DCE 95 4/10/2007 11:43:37.567391 AM 53

101 DCE 96 4/10/2007 11:43:37.568425 AM 85

102 DTE 97 4/10/2007 11:43:37.569656 AM 06

103 DTE 98 4/10/2007 11:43:37.578875 AM f8

104 DTE 99 4/10/2007 11:43:37.579922 AM 01

105 DTE 100 4/10/2007 11:43:37.580970 AM 63

106 DTE 101 4/10/2007 11:43:37.582017 AM 57

107 DTE 102 4/10/2007 11:43:37.583067 AM 30

108 DTE 103 4/10/2007 11:43:37.584114 AM 53

109 DTE 104 4/10/2007 11:43:37.585162 AM 30

110 DTE 105 4/10/2007 11:43:37.586211 AM 59

111 DTE 106 4/10/2007 11:43:37.587259 AM 30

112 DTE 107 4/10/2007 11:43:37.588308 AM 4d

113 DTE 108 4/10/2007 11:43:37.589356 AM 30

114 DTE 109 4/10/2007 11:43:37.590403 AM 44

115 DTE 110 4/10/2007 11:43:37.591452 AM 30

116 DTE 111 4/10/2007 11:43:37.592499 AM 4c

117 DTE 112 4/10/2007 11:43:37.593548 AM 32

118 DTE 113 4/10/2007 11:43:37.594597 AM 41

119 DTE 114 4/10/2007 11:43:37.595645 AM 30

120 DTE 115 4/10/2007 11:43:37.596673 AM 58

121 DTE 116 4/10/2007 11:43:37.597575 AM 30

122 DTE 117 4/10/2007 11:43:37.598624 AM 48

123 DTE 118 4/10/2007 11:43:37.599671 AM 49

124 DTE 119 4/10/2007 11:43:37.600718 AM 50

125 DTE 120 4/10/2007 11:43:37.601767 AM 30

126 DTE 121 4/10/2007 11:43:37.602815 AM 76

127 DTE 122 4/10/2007 11:43:37.603863 AM 30

128 DTE 123 4/10/2007 11:43:37.604913 AM 70

129 DTE 124 4/10/2007 11:43:37.605959 AM 30

130 DTE 125 4/10/2007 11:43:37.607008 AM 46

131 DTE 126 4/10/2007 11:43:37.608055 AM 6f

132 DTE 127 4/10/2007 11:43:37.609104 AM 43

133 DTE 128 4/10/2007 11:43:37.610152 AM 33

134 DTE 129 4/10/2007 11:43:37.611194 AM 6e

135 DTE 130 4/10/2007 11:43:37.612244 AM 31

136 DTE 131 4/10/2007 11:43:37.613460 AM 73

137 DTE 132 4/10/2007 11:43:37.614505 AM 6f

138 DTE 133 4/10/2007 11:43:37.615554 AM 31

139 DTE 134 4/10/2007 11:43:37.616613 AM 8d

140 DCE 135 4/10/2007 11:43:37.622691 AM 06

1.2 Filters for processing Cohu protocol data

1.2.1 4CI

4CI is used to dump “extra” data from an interpreted Cohu capture record.

1. This filter is written in Flex.
2. This filter is suitable for use with Cohu protocol only.
3. This filter requires preprocessing by either MAKESECS or MAKESECX.
4. A typical use of this filter is shown in: `jjj.bat` (Section 1.1.1, page 3)
5. **Listing of: `hcc.nf8` a typical input file.**

```

1      1,      1: DCE      1      0.000000  0.000000 f8 01 c D S 85
2      1,      1: DTE      7      0.006347  0.001041 06
3      1,      2: DTE      8      0.015885  0.009538 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
4      2,      7: DCE      45      0.059655  0.006172 06
5      2,      8: DCE      46      1.004858  0.945203 f8 01 c D S 85
6      2,      39: DTE      52      1.011289  0.001035 06
7      2,      40: DTE      53      1.020090  0.008801 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
8      3,      14: DCE      90      1.063913  0.006087 06
9      3,      15: DCE      91      2.002911  0.938998 f8 01 c D S 85
10     3,      77: DTE      97      2.009316  0.001034 06
11     3,      78: DTE      98      2.018535  0.009219 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
12     4,      21: DCE     135      2.062351  0.006078 06
13     4,      22: DCE     136      2.689490  0.627139 f8 01 R S 80
14     4,      115: DTE     141      2.695031  0.001041 06
15     4,      116: DTE     142      2.704041  0.009010 f8 01 R 3 9 6 0 20 S T D 20 V 2 2e 4 20 20 20 20 20 20 20
20 20 20 82
16     5,      27: DCE     170      2.738333  0.005999 06
17     5,      28: DCE     171      2.749907  0.011574 f8 01 f S 84
18     5,      144: DTE     176      2.755395  0.001042 06
19     6,      33: DCE     177      3.749933  0.001042 f8 01 h S 8a
20     6,      145: DTE     182      3.755303  0.001222 06

```

6. **Listing of: `hcc.4ci` a typical output file.**

```

1 DCE      0.000000 f8 01 c D S 85
2 DTE      0.006347 06
3 DTE      0.015885 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o C 3 n 1 s o 1 8d
4 DCE      0.059655 06
5 DCE      1.004858 f8 01 c D S 85
6 DTE      1.011289 06
7 DTE      1.020090 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o C 3 n 1 s o 1 8d
8 DCE      1.063913 06
9 DCE      2.002911 f8 01 c D S 85
10 DTE      2.009316 06
11 DTE      2.018535 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o C 3 n 1 s o 1 8d
12 DCE      2.062351 06
13 DCE      2.689490 f8 01 R S 80
14 DTE      2.695031 06
15 DTE      2.704041 f8 01 R 3 9 6 0 20 S T D 20 V 2 2e 4 20 20 20 20 20 20 20 20 20 82
16 DCE      2.738333 06
17 DCE      2.749907 f8 01 f S 84
18 DTE      2.755395 06
19 DCE      3.749933 f8 01 h S 8a
20 DTE      3.755303 06

```

1.2.2 Listing of 4CI.1

```

1  %{
2  //      1,      1: DCE      1      0.000000  0.000000 f8 01 P R T S 84
3  //      1,      1: DTE      8      0.007725  0.001042 06
4  //      2,      8: DCE      9      1.696255  0.001042 f8 01 P S T S 85
5  //      2,      2: DTE     16      1.703943  0.001461 06
6  //      3,     15: DCE     17      3.531189  1.827246 f8 01 P L T S 8a
7  //      3,      3: DTE     24      3.538910  0.001042 06
8  //      4,     22: DCE     25      4.896391  0.001042 f8 01 P S T S 85
9  //      4,      4: DTE     32      4.904053  0.001437 06
10 //      5,     29: DCE     33      6.320198  1.416145 f8 01 P S T U 83
11 //      5,      5: DTE     40      6.327887  0.001043 06
12 //123456789 123456789 123456789 123456789 123456789 123456789 123456789 123456789 123456789 123456789
123456789 123456789 123456789
13 // $Header: d:/Binder4/sda2/RCS/4CI.1,v 1.3 2007-04-09 12:33:36-07 Hamilton Exp Hamilton $
14 // 4PI is used to dump "extra" data from an interpreted Panasonic capture
15 //      record.
16 #include <stdio.h>
17 #include <stdlib.h>
18 #undef yywrap
19 %}
20 %x STEP0 STEP1 STEP2 STEP3      STEP5 STEP6 STEP7 STEP8
21 %%
22
23 " "[0-9]+", "                      ;      BEGIN STEP1;
24
25 <STEP1>" "[0-9]+": "                ;      BEGIN STEP3;
26
27 <STEP3>"DCE "                      |
28 <STEP3>" DTE"                      ECHO; BEGIN STEP5;
29
30 <STEP5>" "[0-9]+                    ;      BEGIN STEP6;
31
32 <STEP6>" "[0-9]+". "[0-9]{6}" " ECHO; BEGIN STEP7;
33
34 <STEP7>" "[0-9]+". "[0-9]{6}        ;      BEGIN STEP8;
35
36 <STEP8>.                            ECHO;
37 <STEP8>\n                          ECHO; BEGIN 0;
38
39
40 \n      ECHO;
41 .      ;
42
43 %%
44 // yywrap is for End Of File processing, 1 = done
45 int yywrap(void)
46 {
47     return 1;
48 }
49
50 main(int argc, char *argv[])
51 {
52     fprintf(stderr, "$Id: 4CI.1,v 1.3 2007-04-09 12:33:36-07 Hamilton Exp Hamilton $\n");
53
54     // Do we have to deal with stdin/stdout?
55     // 3 = one for the program name and one each for input and output names
56     if (argc == 3) {
57         // Nope
58         // Get over the program, etc., name
59         argc--;
60         argv++;
61         yyin = fopen(argv[0], "r");
62         if (yyin == NULL) {
63             fprintf(stderr, "\aCould not open \"%s\" for reading, quitting",
64                     argv[0]);
65             exit(EXIT_FAILURE);
66         }
67     }

```

```
68         // Now get over the input file name and get to the output file name
69         argc--;
70         argv++;
71         yyout = fopen(argv[0],"w");
72         if (yyout == NULL) {
73             fprintf(stderr,"\aCould not open \"%s\" for writing, quitting",
74                     argv[0]);
75             exit(EXIT_FAILURE);
76         }
77     }
78     else {
79         // Woops we are using std... type io
80         yyin = stdin;
81         yyout = stdout;
82     }
83
84     yylex();
85     exit(EXIT_SUCCESS);
86 }
87
88 // $Log: 4CI.1,v $
89 // Revision 1.3  2007-04-09 12:33:36-07  Hamilton
90 // Normal end of day data saving
91 //
92 // Revision 1.2  2007-04-09 09:09:36-07  Hamilton
93 // Normal end of day data saving
94 //
95 // Revision 1.1  2007-03-29 14:03:05-08  Hamilton
96 // Initial revision
97 //
98 // Revision 1.10 2007-02-08 06:45:52-08  Hamilton
99 // Normal end of day data saving
100 //
101
```

1.2.3 Fix1Line

FIX1LINE is used to clean up a problem with the output of ONELINE. (This way was easier than actually fixing the problem.)

1. This filter is written in Flex.
2. This filter is suitable for use with Cohu protocol only.
3. This filter requires preprocessing by MAKESECS.
4. A typical use of this filter is shown in: `jjj.bat` (Section 1.1.1, page 3)
5. **Listing of: `hcc.fx2` a typical input file.**

```

1      1,      1: DCE      1      0.000000      0.000000 f8 01 c d S 85
2      1,      1: DTE      7      0.006347      0.001041 06
3      1,      2: DTE      8      0.015885      0.009538 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
4      2,      7: DCE      45      0.059655      0.006172 06
5      2,      8: DCE      46      1.004858      0.945203 f8 01 c d S 85
6      2,      39: DTE      52      1.011289      0.001035 06
7      2,      40: DTE      53      1.020090      0.008801 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
8      3,      14: DCE      90      1.063913      0.006087 06
9      3,      15: DCE      91      2.002911      0.938998 f8 01 c d S 85
10     3,      77: DTE      97      2.009316      0.001034 06
11     3,      78: DTE      98      2.018535      0.009219 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
12     4,      21: DCE     135      2.062351      0.006078 06
13     4,      22: DCE     136      2.689490      0.627139 f8 01 R S 80
14     4,      115: DTE     141      2.695031      0.001041 06
15     4,      116: DTE     142      2.704041      0.009010 f8 01 R 3 9 6 0 20 S T D 20 V 2 2e 4 20 20 20 20 20 20 20
20 20 20 82
16     5,      27: DCE     170      2.738333      0.005999 06
17     5,      28: DCE     171      2.749907      0.011574 f8 01 f S 84
18     5,      144: DTE     176      2.755395      0.001042 06
19     6,      33: DCE     177      3.749933      0.001042 f8 01 h S 8a
20     6,      145: DTE     182      3.755303      0.001222 06

```

6. **Listing of: `hcc.f11` a typical output file.**

```

1      1,      1: DCE      1      0.000000      0.000000 f8 01 c d S 85
2      1,      1: DTE      7      0.006347      0.001041 06
3      1,      2: DTE      8      0.015885      0.009538 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
4      2,      7: DCE      45      0.059655      0.006172 06
5      2,      8: DCE      46      1.004858      0.945203 f8 01 c d S 85
6      2,      39: DTE      52      1.011289      0.001035 06
7      2,      40: DTE      53      1.020090      0.008801 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
8      3,      14: DCE      90      1.063913      0.006087 06
9      3,      15: DCE      91      2.002911      0.938998 f8 01 c d S 85
10     3,      77: DTE      97      2.009316      0.001034 06
11     3,      78: DTE      98      2.018535      0.009219 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
12     4,      21: DCE     135      2.062351      0.006078 06
13     4,      22: DCE     136      2.689490      0.627139 f8 01 R S 80
14     4,      115: DTE     141      2.695031      0.001041 06
15     4,      116: DTE     142      2.704041      0.009010 f8 01 R 3 9 6 0 20 S T D 20 V 2 2e 4 20 20 20 20 20 20 20
20 20 20 82
16     5,      27: DCE     170      2.738333      0.005999 06
17     5,      28: DCE     171      2.749907      0.011574 f8 01 f S 84
18     5,      144: DTE     176      2.755395      0.001042 06
19     6,      33: DCE     177      3.749933      0.001042 f8 01 h S 8a
20     6,      145: DTE     182      3.755303      0.001222 06

```

1.2.4 Listing of Fix1Line.l

```

1  %{
2  //   697,    4847: DCE    5783    245.055181    0.001041 f8 ff c D S 8b
3  //   697,    937: DTE    5789    245.061618    0.001247 06
4  //   697,    938: DTE    5790    245.069941    0.008323 f8 01 63 57 30 53 30 59 30 06 4 d f8 ff u 2 P S 8b
5  //   699,    948: DTE    5808    245.097146    0.001573 06
6  //123456789 123456789 123456789 123456789 123456789 123456789 123456789 123456789 123456789 123456789
7  //      1      2      3      4      5      6      7      8      9     10     11
8  // $Header: d:/Binder4/sda2/RCS/Fix1Line.l,v 1.1 2007-04-09 11:14:54-07 Hamilton Exp Hamilton $
9  // Fix1Line is used to clean up a problem with the output of OneLine.
10 //      (This way was easier.)
11 #include <stdio.h>
12 #include <stdlib.h>
13 #undef yywrap
14 %{
15 %x RESTOFLINE
16 %%
17 ^.{60}.*"f8"      ECHO; fprintf(yyout,"%n                                f8"); BEGIN RESTOFLINE;
18 <RESTOFLINE>.*    ECHO;
19 <RESTOFLINE>\n    ECHO; BEGIN 0;
20
21 .|\n      ECHO;
22 %%
23 // yywrap is for End Of File processing, 1 = done
24 int yywrap(void)
25 {
26     return 1;
27 }
28
29 main(int argc, char *argv[])
30 {
31     fprintf(stderr,"$Id: Fix1Line.l,v 1.1 2007-04-09 11:14:54-07 Hamilton Exp Hamilton $\n");
32
33     // Do we have to deal with stdin/stdout?
34     // 3 = one for the program name and one each for input and output names
35     if (argc == 3) {
36         // Nope
37         // Get over the program, etc., name
38         argc--;
39         argv++;
40         yyin = fopen(argv[0],"r");
41         if (yyin == NULL) {
42             fprintf(stderr,"\aCould not open \"%s\" for reading, quitting",
43                     argv[0]);
44             exit(EXIT_FAILURE);
45         }
46
47         // Now get over the input file name and get to the output file name
48         argc--;
49         argv++;
50         yyout = fopen(argv[0],"w");
51         if (yyout == NULL) {
52             fprintf(stderr,"\aCould not open \"%s\" for writing, quitting",
53                     argv[0]);
54             exit(EXIT_FAILURE);
55         }
56     }
57     else {
58         // Woops we are using std... type io
59         yyin = stdin;
60         yyout = stdout;
61     }
62
63     yylex();
64     exit(EXIT_SUCCESS);
65 }
66
67 // $Log: Fix1Line.l,v $
68 // Revision 1.1 2007-04-09 11:14:54-07 Hamilton

```

```
69 // Initial revision
70 //
71 // Revision 1.10 2007-02-08 06:45:52-08 Hamilton
72 // Normal end of day data saving
73 //
74
```

1.2.5 FixCohu1

FixCOHU1 is used to translate the output of MAKESECS and ONELINE into a Cohu look-a-like output.

1. This filter is written in Flex.
2. This filter is suitable for use with Cohu protocol only.
3. This filter requires preprocessing by either MAKESECS or MAKESECX.
4. A typical use of this filter is shown in: `jjj.bat` (Section 1.1.1, page 3)
5. **Listing of: `hcc.one` a typical input file.**

```

1      1,      1: DCE      1      0.000000  0.000000 f8 01 63 44 53 85
2      1,      1: DTE      7      0.006347  0.001041 06
3      1,      2: DTE      8      0.015885  0.009538 f8 01 63 57 30 53 30 59 30 4d 30 44 30 4c 32 41 30 58 30 48
49 50 30 76 30 70 30 46 6f 43 33 6e 31 73 6f 31 8d
4      2,      7: DCE      45      0.059655  0.006172 06
5      2,      8: DCE      46      1.004858  0.945203 f8 01 63 44 53 85
6      2,      39: DTE     52      1.011289  0.001035 06
7      2,      40: DTE     53      1.020090  0.008801 f8 01 63 57 30 53 30 59 30 4d 30 44 30 4c 32 41 30 58 30 48
49 50 30 76 30 70 30 46 6f 43 33 6e 31 73 6f 31 8d
8      3,      14: DCE     90      1.063913  0.006087 06
9      3,      15: DCE     91      2.002911  0.938998 f8 01 63 44 53 85
10     3,      77: DTE     97      2.009316  0.001034 06
11     3,      78: DTE     98      2.018535  0.009219 f8 01 63 57 30 53 30 59 30 4d 30 44 30 4c 32 41 30 58 30 48
49 50 30 76 30 70 30 46 6f 43 33 6e 31 73 6f 31 8d
12     4,      21: DCE    135      2.062351  0.006078 06
13     4,      22: DCE    136      2.689490  0.627139 f8 01 52 53 80
14     4,      115: DTE   141      2.695031  0.001041 06
15     4,      116: DTE   142      2.704041  0.009010 f8 01 52 33 39 36 30 20 53 54 44 20 56 32 2e 34 20 20 20 20
20 20 20 20 20 20 20 82
16     5,      27: DCE    170      2.738333  0.005999 06
17     5,      28: DCE    171      2.749907  0.011574 f8 01 66 53 84
18     5,      144: DTE   176      2.755395  0.001042 06
19     6,      33: DCE    177      3.749933  0.001042 f8 01 68 53 8a
20     6,      145: DTE   182      3.755303  0.001222 06

```

6. **Listing of: `hcc.fx1` a typical output file.**

```

1      1,      1: DCE      1      0.000000  0.000000 f8 01 c D S 85
2      1,      1: DTE      7      0.006347  0.001041 06
3      1,      2: DTE      8      0.015885  0.009538 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o C
3 n 1 s o 1 8d
4      2,      7: DCE      45      0.059655  0.006172 06
5      2,      8: DCE      46      1.004858  0.945203 f8 01 c D S 85
6      2,      39: DTE     52      1.011289  0.001035 06
7      2,      40: DTE     53      1.020090  0.008801 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o C
3 n 1 s o 1 8d
8      3,      14: DCE     90      1.063913  0.006087 06
9      3,      15: DCE     91      2.002911  0.938998 f8 01 c D S 85
10     3,      77: DTE     97      2.009316  0.001034 06
11     3,      78: DTE     98      2.018535  0.009219 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o C
3 n 1 s o 1 8d
12     4,      21: DCE    135      2.062351  0.006078 06
13     4,      22: DCE    136      2.689490  0.627139 f8 01 R S 80
14     4,      115: DTE   141      2.695031  0.001041 06
15     4,      116: DTE   142      2.704041  0.009010 f8 01 R 3 9 6 0 20 S T D 20 V 2 2e 4 20 20 20 20 20 20 20
20 20 20 82
16     5,      27: DCE    170      2.738333  0.005999 06
17     5,      28: DCE    171      2.749907  0.011574 f8 01 f S 84
18     5,      144: DTE   176      2.755395  0.001042 06
19     6,      33: DCE    177      3.749933  0.001042 f8 01 h S 8a
20     6,      145: DTE   182      3.755303  0.001222 06

```

1.2.6 Listing of FixCohu1.1

```

1  %{
2  //      1,      1: DCE      1      0.000000  0.000000 f8 01 72 3a 54 53 8e
3  //      1,      1: DTE      8      0.007696  0.001034 06
4  //      2,      8: DCE      9      0.207001  0.001034 f8 01 50 53 54 53 85
5  //      2,      2: DTE     16      0.214675  0.001456 06
6  //      3,     15: DCE     17      3.427655  3.212980 f8 01 72 3a 54 53 8e
7  //      3,      3: DTE     24      3.435414  0.001033 06
8  //      4,     22: DCE     25      3.787999  0.001033 f8 01 50 53 54 53 85
9  //      4,      4: DTE     32      3.795722  0.001497 06
10 //      5,     29: DCE     33      9.019355  5.223633 f8 01 72 3b 75 32 8f
11 //      5,      5: DTE     40      9.027169  0.001036 06
12 //123456789 123456789 123456789 123456789 123456789 123456789 123456789
13 // $Header: d:/Binder4/sda2/RCS/FixCohu1.1,v 1.3 2007-04-05 14:12:47-07 Hamilton Exp Hamilton $
14 // FixCohu1 is used to translate the output of MakeSecs and OneLine into
15 //      a Cohu look-a-like output.
16 #include <stdio.h>
17 #include <stdlib.h>
18 #undef yywrap
19 char letter;
20 char letters[100];
21
22 %}
23 %x INMESSAGE OUTMESSAGE
24 %%
25 ~.*"DTE".*" f8"                fprintf(yyout,"%s",yytext); BEGIN INMESSAGE;
26 <INMESSAGE>" "[0-2][0-9a-f]    fprintf(yyout," %c%c",yytext[1],yytext[2]);
27 <INMESSAGE>" "[3-7][0-9a-f]    {letters[0] = yytext[1];
28                                letters[1] = yytext[2];
29                                letters[2] = '\0';
30                                letter = strtol(letters,NULL,16);
31                                fprintf(yyout," %c",letter);
32                                }
33 <INMESSAGE>" 8"[0-9a-f]\n      fprintf(yyout," %c%c\n",yytext[1],yytext[2]); BEGIN 0;
34
35 ~.*"DCE".*" f8"                fprintf(yyout,"%s",yytext); BEGIN OUTMESSAGE;
36 <OUTMESSAGE>" "[0-2][0-9a-f]    fprintf(yyout," %c%c",yytext[1],yytext[2]);
37 <OUTMESSAGE>" "[3-7][0-9a-f]    {letters[0] = yytext[1];
38                                letters[1] = yytext[2];
39                                letters[2] = '\0';
40                                letter = strtol(letters,NULL,16);
41                                fprintf(yyout," %c",letter);
42                                }
43 <OUTMESSAGE>" 8"[0-9a-f]\n      fprintf(yyout," %c%c\n",yytext[1],yytext[2]); BEGIN 0;
44
45
46 .|\n      ECHO;
47 %%
48 // yywrap is for End Of File processing, 1 = done
49 int yywrap(void)
50 {
51     return 1;
52 }
53
54 main(int argc, char *argv[])
55 {
56     fprintf(stderr,"$Id: FixCohu1.1,v 1.3 2007-04-05 14:12:47-07 Hamilton Exp Hamilton $\n");
57
58     // Do we have to deal with stdin/stdout?
59     // 3 = one for the program name and one each for input and output names
60     if (argc == 3) {
61         // Nope
62         // Get over the program, etc., name
63         argc--;
64         argv++;
65         yyin = fopen(argv[0],"r");
66         if (yyin == NULL) {
67             fprintf(stderr,"\aCould not open \"%s\" for reading, quitting",
68                 argv[0]);

```

```
69         exit(EXIT_FAILURE);
70     }
71
72     // Now get over the input file name and get to the output file name
73     argc--;
74     argv++;
75     yyout = fopen(argv[0], "w");
76     if (yyout == NULL) {
77         fprintf(stderr, "\aCould not open \"%s\" for writing, quitting",
78                 argv[0]);
79         exit(EXIT_FAILURE);
80     }
81 }
82 else {
83     // Woops we are using std... type io
84     yyin = stdin;
85     yyout = stdout;
86 }
87
88 yylex();
89 exit(EXIT_SUCCESS);
90 }
91
92 // $Log: FixCohu1.1,v $
93 // Revision 1.3  2007-04-05 14:12:47-07  Hamilton
94 // Normal end of day data saving
95 //
96 // Revision 1.2  2007-04-05 12:30:23-07  Hamilton
97 // Normal end of day data saving
98 //
99 // Revision 1.1  2007-04-03 14:24:11-07  Hamilton
100 // Initial revision
101 //
102 // Revision 1.10 2007-02-08 06:45:52-08  Hamilton
103 // Normal end of day data saving
104 //
105
```

1.2.7 FixCohu2

FixCOHU2 is used to fix the offset of DTE data correctly.

1. This filter is written in Flex.
2. This filter is suitable for use with Cohu protocol only.
3. This filter requires preprocessing by MAKESECS.
4. This filter is sensitive to DTE/DCE data sources.
5. A typical use of this filter is shown in: `jjj.bat` (Section 1.1.1, page 3)
6. Listing of: `hcc.fx1` a typical input file.

```

1      1,      1: DCE      1      0.000000  0.000000 f8 01 c D S 85
2      1,      1: DTE      7      0.006347  0.001041 06
3      1,      2: DTE      8      0.015885  0.009538 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v o p O F o C
3 n 1 s o 1 8d
4      2,      7: DCE     45      0.059655  0.006172 06
5      2,      8: DCE     46      1.004858  0.945203 f8 01 c D S 85
6      2,     39: DTE     52      1.011289  0.001035 06
7      2,     40: DTE     53      1.020090  0.008801 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v o p O F o C
3 n 1 s o 1 8d
8      3,     14: DCE     90      1.063913  0.006087 06
9      3,     15: DCE     91      2.002911  0.938998 f8 01 c D S 85
10     3,     77: DTE     97      2.009316  0.001034 06
11     3,     78: DTE     98      2.018535  0.009219 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v o p O F o C
3 n 1 s o 1 8d
12     4,     21: DCE    135      2.062351  0.006078 06
13     4,     22: DCE    136      2.689490  0.627139 f8 01 R S 80
14     4,    115: DTE    141      2.695031  0.001041 06
15     4,    116: DTE    142      2.704041  0.009010 f8 01 R 3 9 6 0 20 S T D 20 V 2 2e 4 20 20 20 20 20 20 20
20 20 20 82
16     5,     27: DCE    170      2.738333  0.005999 06
17     5,     28: DCE    171      2.749907  0.011574 f8 01 f S 84
18     5,    144: DTE    176      2.755395  0.001042 06
19     6,     33: DCE    177      3.749933  0.001042 f8 01 h S 8a
20     6,    145: DTE    182      3.755303  0.001222 06

```

7. Listing of: `hcc.fx2` a typical output file.

```

1      1,      1: DCE      1      0.000000  0.000000 f8 01 c D S 85
2      1,      1: DTE      7      0.006347  0.001041 06
3      1,      2: DTE      8      0.015885  0.009538 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v o p O F o
C 3 n 1 s o 1 8d
4      2,      7: DCE     45      0.059655  0.006172 06
5      2,      8: DCE     46      1.004858  0.945203 f8 01 c D S 85
6      2,     39: DTE     52      1.011289  0.001035 06
7      2,     40: DTE     53      1.020090  0.008801 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v o p O F o
C 3 n 1 s o 1 8d
8      3,     14: DCE     90      1.063913  0.006087 06
9      3,     15: DCE     91      2.002911  0.938998 f8 01 c D S 85
10     3,     77: DTE     97      2.009316  0.001034 06
11     3,     78: DTE     98      2.018535  0.009219 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v o p O F o
C 3 n 1 s o 1 8d
12     4,     21: DCE    135      2.062351  0.006078 06
13     4,     22: DCE    136      2.689490  0.627139 f8 01 R S 80
14     4,    115: DTE    141      2.695031  0.001041 06
15     4,    116: DTE    142      2.704041  0.009010 f8 01 R 3 9 6 0 20 S T D 20 V 2 2e 4 20 20 20 20 20 20 20
20 20 20 82
16     5,     27: DCE    170      2.738333  0.005999 06
17     5,     28: DCE    171      2.749907  0.011574 f8 01 f S 84
18     5,    144: DTE    176      2.755395  0.001042 06
19     6,     33: DCE    177      3.749933  0.001042 f8 01 h S 8a
20     6,    145: DTE    182      3.755303  0.001222 06

```

1.2.8 Listing of FixCohu2.1

```

1  %{
2  //      1,      1: DCE      1      0.000000  0.000000 f8 01 c D S 85
3  //      1,      1: DTE      7      0.006406  0.001036 06
4  //      1,      2: DTE      8      0.017095  0.010689 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o C 3
n 1 s o 1 8d
5  //      2,      7: DCE     45      0.060842  0.006186 06
6  //      2,      8: DCE     46      1.004861  0.944019 f8 01 c D S 85
7  //      2,     39: DTE     52      1.011242  0.001041 06
8  //      2,     40: DTE     53      1.021341  0.010099 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o C 3
n 1 s o 1 8d
9  //123456789 123456789 123456789 123456789 123456789 123456789
10 // $Header: d:/Binder4/sda2/RCS/FixCohu2.1,v 1.3 2007-04-11 14:00:14-07 Hamilton Exp Hamilton $
11 // FixCohu2 is used to fix the offset of DTE data correctly
12 #include <stdio.h>
13 #include <stdlib.h>
14 #undef yywrap
15 int once = 0;
16 %}
17 %x INDTELINE INDCELINE RESTOFLINE
18 %%
19 .*" DTE "      fprintf(yyout,"%s",yytext); BEGIN INDTELINE;
20 <INDTELINE>.{31} {
21     if (once == 0)
22     {
23         fprintf(yyout,"%s ",yytext);
24         once = 1;
25     }
26     else
27     {
28         fprintf(yyout,"%s",yytext);
29     }
30 }
31 <INDTELINE>|.      fprintf(yyout,"%c",yytext[0]);
32 <INDTELINE>\n      fprintf(yyout,"\n"); once = 0; BEGIN 0;
33
34 .*" DCE "      fprintf(yyout,"%s",yytext); BEGIN INDCELINE;
35 <INDCELINE>.{31}  fprintf(yyout,"%s",yytext);
36 <INDCELINE>"06"   fprintf(yyout," %s",yytext);
37 <INDCELINE>|.      fprintf(yyout,"%c",yytext[0]);
38 <INDCELINE>\n      fprintf(yyout,"\n"); BEGIN 0;
39
40
41 .|\n      ;
42 %%
43 // yywrap is for End Of File processing, 1 = done
44 int yywrap(void)
45 {
46     return 1;
47 }
48
49 main(int argc, char *argv[])
50 {
51     fprintf(stderr,"$Id: FixCohu2.1,v 1.3 2007-04-11 14:00:14-07 Hamilton Exp Hamilton $\n");
52
53     // Do we have to deal with stdin/stdout?
54     // 3 = one for the program name and one each for input and output names
55     if (argc == 3) {
56         // Nope
57         // Get over the program, etc., name
58         argc--;
59         argv++;
60         yyin = fopen(argv[0],"r");
61         if (yyin == NULL) {
62             fprintf(stderr,"\aCould not open \"%s\" for reading, quitting",
63                 argv[0]);
64             exit(EXIT_FAILURE);
65         }
66     }

```

```

67         // Now get over the input file name and get to the output file name
68         argc--;
69         argv++;
70         yyout = fopen(argv[0], "w");
71         if (yyout == NULL) {
72             fprintf(stderr, "\aCould not open \"%s\" for writing, quitting",
73                     argv[0]);
74             exit(EXIT_FAILURE);
75         }
76     }
77     else {
78         // Woops we are using std... type io
79         yyin = stdin;
80         yyout = stdout;
81     }
82
83     yylex();
84     exit(EXIT_SUCCESS);
85 }
86
87 // $Log: FixCohu2.1,v $
88 // Revision 1.3  2007-04-11 14:00:14-07  Hamilton
89 // Normal end of day data saving
90 //
91 // Revision 1.2  2007-04-05 14:14:04-07  Hamilton
92 // Normal end of day data saving
93 //
94 // Revision 1.1  2007-04-05 12:30:32-07  Hamilton
95 // Initial revision
96 //
97 // Revision 1.10 2007-02-08 06:45:52-08  Hamilton
98 // Normal end of day data saving
99 //
100

```

1.2.9 NoEndF8

NoEndF8 is used to strip off all 0xF8 codes on the end of lines.

1. This filter is written in Flex.
2. This filter is suitable for use with Cohu protocol only.
3. This filter requires preprocessing by either MAKESECS or MAKESECX.
4. A typical use of this filter is shown in: `jjj.bat` (Section 1.1.1, page 3)
5. **Listing of: `hcc.f11` a typical input file.**

```

1      1,      1: DCE      1      0.000000  0.000000 f8 01 c D S 85
2      1,      1: DTE      7      0.006347  0.001041 06
3      1,      2: DTE      8      0.015885  0.009538 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
4      2,      7: DCE      45      0.059655  0.006172 06
5      2,      8: DCE      46      1.004858  0.945203 f8 01 c D S 85
6      2,     39: DTE      52      1.011289  0.001035 06
7      2,     40: DTE      53      1.020090  0.008801 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
8      3,     14: DCE      90      1.063913  0.006087 06
9      3,     15: DCE      91      2.002911  0.938998 f8 01 c D S 85
10     3,     77: DTE      97      2.009316  0.001034 06
11     3,     78: DTE      98      2.018535  0.009219 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
12     4,     21: DCE     135      2.062351  0.006078 06
13     4,     22: DCE     136      2.689490  0.627139 f8 01 R S 80
14     4,    115: DTE     141      2.695031  0.001041 06
15     4,    116: DTE     142      2.704041  0.009010 f8 01 R 3 9 6 0 20 S T D 20 V 2 2e 4 20 20 20 20 20 20 20
20 20 20 82
16     5,     27: DCE     170      2.738333  0.005999 06
17     5,     28: DCE     171      2.749907  0.011574 f8 01 f S 84
18     5,    144: DTE     176      2.755395  0.001042 06
19     6,     33: DCE     177      3.749933  0.001042 f8 01 h S 8a
20     6,    145: DTE     182      3.755303  0.001222 06

```

6. **Listing of: `hcc.nf8` a typical output file.**

```

1      1,      1: DCE      1      0.000000  0.000000 f8 01 c D S 85
2      1,      1: DTE      7      0.006347  0.001041 06
3      1,      2: DTE      8      0.015885  0.009538 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
4      2,      7: DCE      45      0.059655  0.006172 06
5      2,      8: DCE      46      1.004858  0.945203 f8 01 c D S 85
6      2,     39: DTE      52      1.011289  0.001035 06
7      2,     40: DTE      53      1.020090  0.008801 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
8      3,     14: DCE      90      1.063913  0.006087 06
9      3,     15: DCE      91      2.002911  0.938998 f8 01 c D S 85
10     3,     77: DTE      97      2.009316  0.001034 06
11     3,     78: DTE      98      2.018535  0.009219 f8 01 c W O S O Y O M O D O L 2 A O X O H I P O v O p O F o
C 3 n 1 s o 1 8d
12     4,     21: DCE     135      2.062351  0.006078 06
13     4,     22: DCE     136      2.689490  0.627139 f8 01 R S 80
14     4,    115: DTE     141      2.695031  0.001041 06
15     4,    116: DTE     142      2.704041  0.009010 f8 01 R 3 9 6 0 20 S T D 20 V 2 2e 4 20 20 20 20 20 20 20
20 20 20 82
16     5,     27: DCE     170      2.738333  0.005999 06
17     5,     28: DCE     171      2.749907  0.011574 f8 01 f S 84
18     5,    144: DTE     176      2.755395  0.001042 06
19     6,     33: DCE     177      3.749933  0.001042 f8 01 h S 8a
20     6,    145: DTE     182      3.755303  0.001222 06

```

1.2.10 Listing of NoEndF8.1

```

1  %{
2  // $Header: d:/Binder4/sda2/RCS/NoEndF8.1,v 1.1 2007-04-09 11:15:06-07 Hamilton Exp Hamilton $
3  // NoEndF8 is used to strip off all F8 codes on the end of lines.
4  #include <stdio.h>
5  #include <stdlib.h>
6  #undef yywrap
7  %}
8  %%
9  "f8"$ ;
10
11  .|\n      ECHO;
12  %%
13  // yywrap is for End Of File processing, 1 = done
14  int yywrap(void)
15  {
16      return 1;
17  }
18
19  main(int argc, char *argv[])
20  {
21      fprintf(stderr,"$Id: NoEndF8.1,v 1.1 2007-04-09 11:15:06-07 Hamilton Exp Hamilton $\n");
22
23      // Do we have to deal with stdin/stdout?
24      // 3 = one for the program name and one each for input and output names
25      if (argc == 3) {
26          // Nope
27          // Get over the program, etc., name
28          argc--;
29          argv++;
30          yyin = fopen(argv[0],"r");
31          if (yyin == NULL) {
32              fprintf(stderr,"\aCould not open \"%s\" for reading, quitting",
33                      argv[0]);
34              exit(EXIT_FAILURE);
35          }
36
37          // Now get over the input file name and get to the output file name
38          argc--;
39          argv++;
40          yyout = fopen(argv[0],"w");
41          if (yyout == NULL) {
42              fprintf(stderr,"\aCould not open \"%s\" for writing, quitting",
43                      argv[0]);
44              exit(EXIT_FAILURE);
45          }
46      }
47      else {
48          // Woops we are using std... type io
49          yyin = stdin;
50          yyout = stdout;
51      }
52
53      yylex();
54      exit(EXIT_SUCCESS);
55  }
56
57  // $Log: NoEndF8.1,v $
58  // Revision 1.1  2007-04-09 11:15:06-07  Hamilton
59  // Initial revision
60  //
61  // Revision 1.10 2007-02-08 06:45:52-08  Hamilton
62  // Normal end of day data saving
63  //
64

```

1.2.11 OneLine

ONELINE is used to convert files processed with MAKESECS into one line of Cohu interpreted data.

1. This filter is written in Flex.
2. This filter is suitable for use with Cohu protocol only.
3. This filter requires preprocessing by MAKESECS.
4. This filter is sensitive to DTE/DCE data sources.
5. A typical use of this filter is shown in: `jjj.bat` (Section 1.1.1, page 3)
6. Listing of: `hcc.ms` a typical input file.

```

1  $ Id: MakeSecs.1,v 1.11 2008-02-20 08:06:33-08 Hamilton Exp Hamilton $
2  $Header: d:/Binder4/sda2/RCS/Hcc.ms,v 1.2 2008-03-05 10:35:41-08 Hamilton Exp Hamilton $
3  FTS capture buffer (4/10/2007 11:51:23 AM)
4  Event 1 (4/10/2007 11:43:35.560340 AM) through
5  Event 16,806 (4/10/2007 11:51:03.703768 AM)
6
7      1,      1: DCE      1      0.000000      0.000000 f8
8      1,      2: DCE      2      0.001036      0.001036 01
9      1,      3: DCE      3      0.002071      0.001035 63
10     1,      4: DCE      4      0.003113      0.001042 44
11     1,      5: DCE      5      0.004148      0.001035 53
12     1,      6: DCE      6      0.005189      0.001041 85
13
14     1,      1: DTE      7      0.006347      0.001041 06
15     1,      2: DTE      8      0.015885      0.009538 f8
16     1,      3: DTE      9      0.016933      0.001048 01
17     1,      4: DTE     10      0.017981      0.001048 63
18     1,      5: DTE     11      0.019029      0.001048 57
19     1,      6: DTE     12      0.020078      0.001049 30
20     1,      7: DTE     13      0.021126      0.001048 53

```

7. Listing of: `hcc.one` a typical output file.

```

1      1,      1: DCE      1      0.000000      0.000000 f8 01 63 44 53 85
2      1,      1: DTE      7      0.006347      0.001041 06
3      1,      2: DTE      8      0.015885      0.009538 f8 01 63 57 30 53 30 59 30 4d 30 44 30 4c 32 41 30 58 30 48
49 50 30 76 30 70 30 46 6f 43 33 6e 31 73 6f 31 8d
4      2,      7: DCE     45      0.059655      0.006172 06
5      2,      8: DCE     46      1.004858      0.945203 f8 01 63 44 53 85
6      2,     39: DTE     52      1.011289      0.001035 06
7      2,     40: DTE     53      1.020090      0.008801 f8 01 63 57 30 53 30 59 30 4d 30 44 30 4c 32 41 30 58 30 48
49 50 30 76 30 70 30 46 6f 43 33 6e 31 73 6f 31 8d
8      3,     14: DCE     90      1.063913      0.006087 06
9      3,     15: DCE     91      2.002911      0.938998 f8 01 63 44 53 85
10     3,     77: DTE     97      2.009316      0.001034 06
11     3,     78: DTE     98      2.018535      0.009219 f8 01 63 57 30 53 30 59 30 4d 30 44 30 4c 32 41 30 58 30 48
49 50 30 76 30 70 30 46 6f 43 33 6e 31 73 6f 31 8d
12     4,     21: DCE    135      2.062351      0.006078 06
13     4,     22: DCE    136      2.689490      0.627139 f8 01 52 53 80
14     4,    115: DTE    141      2.695031      0.001041 06
15     4,    116: DTE    142      2.704041      0.009010 f8 01 52 33 39 36 30 20 53 54 44 20 56 32 2e 34 20 20 20 20
20 20 20 20 20 20 20 82
16     5,     27: DCE    170      2.738333      0.005999 06
17     5,     28: DCE    171      2.749907      0.011574 f8 01 66 53 84
18     5,    144: DTE    176      2.755395      0.001042 06
19     6,     33: DCE    177      3.749933      0.001042 f8 01 68 53 8a
20     6,    145: DTE    182      3.755303      0.001222 06

```

1.2.12 Listing of OneLine.l

```

1  %{
2  //      1,      1: DCE      1      0.000000  0.000000 f8
3  //      1,      2: DCE      2      0.001036  0.001036 01
4  //      1,      3: DCE      3      0.002071  0.001035 72
5  //      1,      4: DCE      4      0.003113  0.001042 3a
6  //      1,      5: DCE      5      0.004148  0.001035 54
7  //      1,      6: DCE      6      0.005190  0.001042 53
8  //      1,      7: DCE      7      0.006224  0.001034 8e
9  //
10 //      1,      1: DTE      8      0.007696  0.001034 06
11 //123456789 123456789 123456789 123456789 123456789 123456789
12 // $Header: d:/Binder4/sda2/RCS/OneLine.l,v 1.1 2007-04-03 14:24:19-07 Hamilton Exp Hamilton $
13 // OneLine is used to convert files processed with MakeSecs into one line of Cohu interpreted data.
14 #include <stdio.h>
15 #include <stdlib.h>
16 #undef yywrap
17 %}
18 %x INMESSAGE OUTMESSAGE
19 %%
20 ~.*"DCE".*"06"\n          ECHO;
21 ~.*"DCE".*"f8"            ECHO; BEGIN INMESSAGE;
22 <INMESSAGE>~.{52}" "[0-7a-f][0-9a-f] fprintf(yyout," %c%c",yytext[53],yytext[54]);
23 <INMESSAGE>~.{52}" 8"[0-9a-f]{1} fprintf(yyout," %c%c\n",yytext[53],yytext[54]); BEGIN 0;
24 <INMESSAGE>\n          ;
25
26 ~.*"DTE".*"06"\n          ECHO;
27 ~.*"DTE".*"f8"            ECHO; BEGIN OUTMESSAGE;
28 <OUTMESSAGE>~.{52}" "[0-7a-f][0-9a-f] fprintf(yyout," %c%c",yytext[53],yytext[54]);
29 <OUTMESSAGE>~.{52}" 8"[0-9a-f]{1} fprintf(yyout," %c%c\n",yytext[53],yytext[54]); BEGIN 0;
30 <OUTMESSAGE>\n          ;
31
32 .|\n          ;
33 %%
34 // yywrap is for End Of File processing, 1 = done
35 int yywrap(void)
36 {
37     return 1;
38 }
39
40 main(int argc, char *argv[])
41 {
42     fprintf(stderr,"$Id: OneLine.l,v 1.1 2007-04-03 14:24:19-07 Hamilton Exp Hamilton $\n");
43
44     // Do we have to deal with stdin/stdout?
45     // 3 = one for the program name and one each for input and output names
46     if (argc == 3) {
47         // Nope
48         // Get over the program, etc., name
49         argc--;
50         argv++;
51         yyin = fopen(argv[0],"r");
52         if (yyin == NULL) {
53             fprintf(stderr,"\aCould not open \"%s\" for reading, quitting",
54                     argv[0]);
55             exit(EXIT_FAILURE);
56         }
57
58         // Now get over the input file name and get to the output file name
59         argc--;
60         argv++;
61         yyout = fopen(argv[0],"w");
62         if (yyout == NULL) {
63             fprintf(stderr,"\aCould not open \"%s\" for writing, quitting",
64                     argv[0]);
65             exit(EXIT_FAILURE);
66         }
67     }
68     else {

```

```
69         // Woops we are using std... type io
70         yyin = stdin;
71         yyout = stdout;
72     }
73
74     yylex();
75     exit(EXIT_SUCCESS);
76 }
77
78 // $Log: OneLine.1,v $
79 // Revision 1.1  2007-04-03 14:24:19-07  Hamilton
80 // Initial revision
81 //
82 // Revision 1.10  2007-02-08 06:45:52-08  Hamilton
83 // Normal end of day data saving
84 //
85
```

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