

# EAS Simulator

## Version 2.3

### Released April 2019

#### 1 Introduction

EAS Simulator 2.3 is a java program that is capable of sending EAS alerts to the intended server according to the SCTE-18 standard defined in Emergency Alert Messaging for Cable<sup>[1]</sup>.

#### 2 Program Input

The program reads the input from a properties file (i.e. config.properties) as follows:

```
alertID = 10227
srcIP = 172.16.3.101
srcPort = 32769
srcMacAddress = 00:13:3b:10:31:5b
dstIP = 239.8.8.70
dstPort = 10000
multicastTtl = 20
alertMessageDuplicateCount = 2
additionalStartDelay = 0
alertMessageTimeRemaining = 30
eventStartTime = 0
alertPriority = 15
eventDuration = 15
isInBandEnabled = true
detailsMajorChannelNumber = 0
detailsMinorChannelNumber = 0
detailsAudioOobId = 0
detailsVideoOobId = 0
exceptionChannelList = enabled
inBandExceptionList = 116-2 115-1 79-1 116-2
oobExceptionList = 2012 2059 2076 2079 5022 5023
easAlertCode = RWT
locations = 004021 004013 006003 000000 006000 006007 002000 002068 010000 025000
012000 008000
outOfBandPID = disabled
```

#### 3 Field Description

##### alertID

Specifies the Event ID

Value: Numeric

##### srcIP

Specifies the source IP.

Value: valid IP address, which is configured in a Network Interface of the host machine.

##### srcPort

Specifies the Source port  
Value: a valid port  
Range: 0-65535

#### `srcMacAddress`

Specifies the source MAC address  
Value: MAC address of the host machine

#### `dstIP`

Specifies the destination Multicast IP  
Value: valid Multicast IPv4 Address

#### `dstPort`

Specifies the Destination port  
Value: a valid port between 0-65535

#### `multicastTtl`

Multicast Time to live  
Value: numeric

#### `alertMessageDuplicateCount`

Specifies the number of times the packet should be repeated for a reliable transfer  
Value: numeric

#### `additionalStartDelay`

Specifies the time to delay before starting an event. But in our system, this field is ignored.  
Value: numeric

#### `alertMessageTimeRemaining`

Specifies the alert duration (AMTR) in seconds  
Value: 0-255

#### `eventStartTime`

This field is ignored in our system.  
Value: numeric

#### `alertPriority`

Specefies the alert Priority  
Value: 0, 3, 7, 11, 15

#### `eventDuration`

This field is ignored in our system.  
Value: numeric

#### `isInBandEnabled` (Only changes from version 2.2)

Specifies if the Alert is Inband or Out of Band. Inband if set to true, Out of Band if flase. With a value "true" it will send the values specified in detailsMajorChannelNumber and detailsMinorChannelNumber and detailsAudioOobId and

detailsVideo0obId, but for false, it will only send values specified for detailsAudio0obId and detailsVideo0obId.

Value: true or false

#### detailsMajorChannelNumber

Specifies the details major channel number

Value: 0-255

#### detailsMinorChannelNumber

Specifies the minor channel number

Value: 0-255

#### detailsAudio0obId

Specifies Details Source ID, Audio channel

Value: 0-65535

#### detailsVideo0obId

Specifies Details Source ID, Audio channel

Value: 0-65535

#### exceptionChannelList

If enabled, either Inband or Out of Band exception list will be sent, depending on isInBandEnabled field.

Value: enabled, disabled

#### inBandExceptionList

Exception list for Inband

Value: <major channel Number>-<minor channel number> separated by a space, 0-255 for both major and minor

#### oobExceptionList

Exception list for OOB.

Value: numeric, 0-65535 separated by a space

#### easAlertCode

EAS Alert code

Value: any valid alert code listed in the simulator

#### locations

Specifies the FIPS codes.

Value: One or more locations listed in the simulator.

#### outOfBandPID

Specifies the PID, 0x1FFC if enabled, 0x1FFB if disabled

Value: enabled, disabled

## 4 How to run

```
$ java -jar EasSimulatorCli-vX.X.jar [options] [args]
```

Where options include:

- f: read config file [usage: -f [fileName]]
- s: print Eas Payload Summary upon sending
- x: turn off all packet information on console

```

    -p:  decode SCTE18 pcap/pcapng
         [usage: -p [filename]]
    -l:  list all available locations
    -c:  list all available SCTE18 Alert Codes
    -g:  write sample config file
--help: shows help
    -v:  version
    -a:  about

```

## 5 Sample EAS Alert

config.properties:

```

alertID = 10206
srcIP = 172.16.3.101
srcPort = 32769
srcMacAddress = 00:13:3b:10:31:5b
dstIP = 239.8.8.70
dstPort = 10000
multicastTtl = 20
alertMessageDuplicateCount = 4
additionalStartDelay = 0
alertMessageTimeRemaining = 60
eventStartTime = 600
alertPriority = 15
eventDuration = 15
isInBandEnabled = true
detailsMajorChannelNumber = 0
detailsMinorChannelNumber = 0
detailsAudioOobId = 0
detailsVideoOobId = 0
exceptionChannelList = enabled
inBandExceptionList = 116-2 115-1 79-1
oobExceptionList = 2012 2059 2076 2079 5022 5023 5024 5042 5063 7744 7754 7759
7760 7764 7767 7768 7776 7782 7785 7788 7907 7910 7913 7916 7917 7918 7920 7921
7922 7924 7925 7926 7927 7928 7933 9165
easAlertCode = TOR
locations = 004021 004013 006003 000000 006000 006007 002000 002068 010000 025000
012000 008000
outOfBandPID = disabled

```

```
$ java -jar EasSimulatorCli-2.2.jar -f config.properties -s
```

Generated alertText: Vecima Networks HAS ISSUED A TORNADO WARNING FOR THE FOLLOWING COUNTIES/AREAS: Pinal, AZ; Maricopa, AZ; Alpine, CA; United States; California; Butte, CA; Alaska; Denali, AK; Delaware; Massachusetts; Florida; Colorado; AT 03:02 PM ON Apr 17, 2019 EFFECTIVE UNTIL 03:17 PM. MESSAGE FROM Vecima.

```

*****Generated EAS Payload Info*****
tableID = 11011000
sectionSyntaxIndicator = 1
zero = 0
reserved_ = 11

```

```

sectionLength = 000110100111 [Decimal: 423]
tableIdExtension = 0000000000000000
reserved_2 = 11
sequenceNumber = 10000 [Decimal: 16]
currentNextIndicator = 1
sectionNumber = 00000000
lastSectionNumber = 00000000
protocolVersion = 00000000
easEventId = 0010011111011110 [Decimal: 10206]
easOriginatorCode = 010001010100000101010011
easEventCodeLength = 00000011
easEventCode = 010100100101011101010100
natureOfActivationTextLength = 00011100
natureOfActivationText =
00000000101100101011011100110011100000001000000000000000000101000101001000101010
10001010101010100100101010010010001010100010000010101110100010101000101010010
1101001100010110010010000001010100010001010101001101010100
alertMessageTimeRemaining = 00111100 [Decimal: 60]
eventStartTime = 01001001111000100000010011010010 [Decimal: 1239549138]
Start Time Delay: 600 secs]
eventDuration = 0000000000001111 [Decimal: 15]
reserved_3 = 111111111111
alertPriority = 1111 [Decimal: 15]
detailsOobSourceId = 0000000000000000 [Decimal: 0]
reserved_4 = 111111
detailsMajorChannelNumber = 0000000000 [Decimal: 0]
reserved_5 = 111111
detailsMinorChannelNumber = 0000000000 [Decimal: 0]
audioOobSourceId = 0000000000000000 [Decimal: 0]
alertTextLength = 0000000100101101 [Decimal: 301]
alertText =
000000001011001010110111001100111000000010000000000000000101010100101011001100101011
00011011010010110110101100001001000000100111001100101011101000111011101101111011100
10011010110111001100100000010010000100000101010011001000000100100101010011010100110
10101010100010101000100001000000100000100100000010101000100111101010010010011100100
00010100010001001111001000000101011101000001010100100100111001001001010011100100011
10010000001000110010011110101001000100000010101000100100001000101001000000100011001
001111010011000100110001001111010101110100100100111001000111001000000100001101001
111010101010100111001010100010010010001010101001100101111010000010101001001000101
01000001010100110011101000100000010100000110100101101110011000010110110000101100001
00000010000010101101000111011001000000100110101100001011100100110100101100011011011
11011100000110000100101100001000000100000101011010001110110010000001000001011011000
11100000110100101101110011001010010110000100000010000110100000100111011001000000101
01010110111001101001011101000110010101100100001000000101001101110100011000010111010
00110010101110011001110110010000001000011011000010110110001101001011001100110111101
11001001101110011010010110000100111011001000000100001001110101011101000111010001100
10100101100001000000100001101000001001110110010000001000001011011000110000101110011
01101011011000010011101100100000010001000110010101101110011000010110110001101001001
01100001000000100000101001011001110110010000001000100011001010110110001100001011101
110110000101110010011100101001110110010000001001101011000010111001101110011011000010
11000110110100001110101011100110110010101110100011101000111001100111011001000000100
01100110110001101111011100100110100101100100011000010011101100100000010000110110111
10110110001101111011100100110000101100100011011110011101100100000010000010101010000
10000000110000001100110011101000110000001100100010000001010000010011010010000001001

```

```

11101001110001000000100000101110000011100100010000000110001001101110010110000100000
00110010001100000011000100111001001000000100010101000110010001100100010101000011010
101000100100101010110010001010010000001010101010011100101010001001001001100001000
00001100000011001100111010001100010011011100100000010100000100110100101110001000000
10011010100010101010011010100110100000101000111010001010010000001000110010100100100
11110100110100100000010101100110010101100011011010010110110101100001001011100010000
0

```

```

locationCodeCount = 00001100 [Decimal: 12]
*****Location[0]*****
stateCode = 00000100 [Decimal: 4]
countySubdivision = 0000 [Decimal: 0]
reserved_6 = 11
countyCode = 0000010101 [Decimal: 21]
*****Location[1]*****
stateCode = 00000100 [Decimal: 4]
countySubdivision = 0000 [Decimal: 0]
reserved_6 = 11
countyCode = 0000001101 [Decimal: 13]
*****Location[2]*****
stateCode = 00000110 [Decimal: 6]
countySubdivision = 0000 [Decimal: 0]
reserved_6 = 11
countyCode = 0000000011 [Decimal: 3]
*****Location[3]*****
stateCode = 00000000 [Decimal: 0]
countySubdivision = 0000 [Decimal: 0]
reserved_6 = 11
countyCode = 0000000000 [Decimal: 0]
*****Location[4]*****
stateCode = 00000110 [Decimal: 6]
countySubdivision = 0000 [Decimal: 0]
reserved_6 = 11
countyCode = 0000000000 [Decimal: 0]
*****Location[5]*****
stateCode = 00000110 [Decimal: 6]
countySubdivision = 0000 [Decimal: 0]
reserved_6 = 11
countyCode = 0000000111 [Decimal: 7]
*****Location[6]*****
stateCode = 00000010 [Decimal: 2]
countySubdivision = 0000 [Decimal: 0]
reserved_6 = 11
countyCode = 0000000000 [Decimal: 0]
*****Location[7]*****
stateCode = 00000010 [Decimal: 2]
countySubdivision = 0000 [Decimal: 0]
reserved_6 = 11
countyCode = 0001000100 [Decimal: 68]
*****Location[8]*****
stateCode = 00001010 [Decimal: 10]
countySubdivision = 0000 [Decimal: 0]
reserved_6 = 11
countyCode = 0000000000 [Decimal: 0]

```

\*\*\*\*\*Location[9]\*\*\*\*\*

stateCode = 00011001 [Decimal: 25]

countySubdivision = 0000 [Decimal: 0]

reserved\_6 = 11

countyCode = 0000000000 [Decimal: 0]

\*\*\*\*\*Location[10]\*\*\*\*\*

stateCode = 00001100 [Decimal: 12]

countySubdivision = 0000 [Decimal: 0]

reserved\_6 = 11

countyCode = 0000000000 [Decimal: 0]

\*\*\*\*\*Location[11]\*\*\*\*\*

stateCode = 00001000 [Decimal: 8]

countySubdivision = 0000 [Decimal: 0]

reserved\_6 = 11

countyCode = 0000000000 [Decimal: 0]

\*\*\*\*\*End of Locations [Total: 12]\*\*\*\*\*

exceptionCount = 00000011 [Decimal: 3]

\*\*\*\*\*Exception Channel[0]\*\*\*\*\*

inBandReference = 1

reserved\_7 = 1111 111

reserved\_8 = 1111 11

exceptionMajorChannelNumber = 0001110100 [Decimal: 116]

reserved\_9 = 1111 11

exceptionMinorChannelNumber = 0000000010 [Decimal: 2]

\*\*\*\*\*Exception Channel[1]\*\*\*\*\*

inBandReference = 1

reserved\_7 = 1111 111

reserved\_8 = 1111 11

exceptionMajorChannelNumber = 0001110011 [Decimal: 115]

reserved\_9 = 1111 11

exceptionMinorChannelNumber = 0000000001 [Decimal: 1]

\*\*\*\*\*Exception Channel[2]\*\*\*\*\*

inBandReference = 1

reserved\_7 = 1111 111

reserved\_8 = 1111 11

exceptionMajorChannelNumber = 0001001111 [Decimal: 79]

reserved\_9 = 1111 11

exceptionMinorChannelNumber = 0000000001 [Decimal: 1]

\*\*\*\*\*End of Exception Channels [Total: 3]\*\*\*\*\*

reserved\_11 = 111111

descriptorsLength = 00 0000 0000

CRC\_32 = CF3130C1

EAS Header =

D8B1A70000E100000027DE454153035257541C01656E67010000145245515549524544205745454B4C5  
920544553543C49E204D2000FFFFF0000FC00FC000000012D01656E67010000AA566563696D61204E65  
74776F726B732048415320495353554544204120544F524E41444F205741524E494E4720464F5220544  
84520464F4C4C4F57494E4720434F554E544945532F41524541533A2050696E616C2C20415A3B204D61  
7269636F70612C20415A3B20416C70696E652C2043413B20556E69746564205374617465733B2043616  
C69666F726E69613B2042757474652C2043413B20416C61736B613B2044656E616C692C20414B3B2044  
656C61776172653B204D6173736163687573657474733B20466C6F726964613B20436F6C6F7261646F3  
B2041542030333A303220504D204F4E204170722031372C20323031392045464645435449564520554E  
54494C2030333A313720504D2E204D4553534147452046524F4D20566563696D612E200C040C15040C0

```
D060C03000C00060C00060C07020C00020C440A0C00190C000C0C00080C0003FFFC74FC02FFFC73FC01
FFFC4FFC01FC00CF3130C1
```

Length = 426 bytes. Packets: 3

\*\*\*\*\*

Padded : 125 bytes

Packet[0]:

```
475FFB1000D8B1A70000E100000027DE454153035257541C01656E67010000145245515549524544205
745454B4C5920544553543C49E204D2000FFFFF0000FC00FC000000012D01656E67010000AA56656369
6D61204E6574776F726B732048415320495353554544204120544F524E41444F205741524E494E47204
64F522054484520464F4C4C4F57494E4720434F554E544945532F41524541533A2050696E616C2C2041
5A3B204D617269636F70612C20415A3B20416C70696E
```

Packet[1]:

```
471FFB11652C2043413B20556E69746564205374617465733B2043616C69666F726E69613B204275747
4652C2043413B20416C61736B613B2044656E616C692C20414B3B2044656C61776172653B204D617373
6163687573657474733B20466C6F726964613B20436F6C6F7261646F3B2041542030333A303220504D2
04F4E204170722031372C20323031392045464645435449564520554E54494C2030333A313720504D2E
204D4553534147452046524F4D20566563696D612E20
```

Packet[2]:

```
471FFB120C040C15040C0D060C03000C00060C00060C07020C00020C440A0C00190C000C0C00080C000
3FFFC74FC02FFFC73FC01FFFC4FFC01FC00CF3130C1FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
```

Cable Emergency Alert sent on: Wed Apr 17 15:02:18 CST 2019 with Eas event ID: 10206

We can turn off details log by using -x option as follows:

```
$ java -jar EasSimulatorCli-2.2.jar -f config.properties -x
```

Cable Emergency Alert sent on: Wed Apr 17 15:02:18 CST 2019 with Eas event ID: 10206

## 6 Decode a pcap EAS packet

This simulator can also decode SCTE-18 packets captured in Wireshark.

```
$ java -jar EasSimulatorCli-2.2.jar -p eas_inband_021018.pcap
```

\*\*\*\*\*Parsing Packet\*\*\*\*\*

Pcap File: eas\_inband\_021018.pcap

Value of element 0:

```
01005E0D02FE004063DF28030800450000D8000040000A1171FC0A01020DEF0D02FE800113BA00C4FF5
8475FFB1000D8B1AB0000C30000002896454153035257541C01656E6701000014524551554952454420
5745454B4C59205445535478000000000000FFFF081FFC00FC00081F00C501656E67010000BD5665636
96D61204E6574776F726B7320484153204953535545442041205245515549524544205745454B4C5920
5445535420464F522054484520464F4C4C4F57494E4720434F554E544945532F41524541533A2050696
E616C3B204D617269636F70612C20415A3B20416C7069
```



Value of element 1:

```
01005E0D02FE004063DF28030800450000D8000040000A1171FC0A01020DEF0D02FE800113BA00C49AE
8471FFB116E652C2043413B20415420343A313820504D204F4E204F435420322C203230313820454646
45435449564520554E54494C20343A333320504D2E204D4553534147452046524F4D20566563696D612
E2003040C15040C0D060C031E7FFFFFF1EF77FFFFFF1EF67FFFFFF1E607FFFFFF1E637FFFFFF1E5D7FFFFFF1E
577FFFFFF1E547FFFFFF1E4F7FFFFFF1E667FFFFFF1E697FFFFFF1E6C7FFFFFF07EB7FFFFFF07EE7FFFFFF1EE07
FFFFFF1EE37FFFFFF07E77FFFFFF080C7FFFFFF17827FFFFFF
```

Value of element 2:

```
01005E0D02FE004063DF28030800450000D8000040000A1171FC0A01020DEF0D02FE800113BA00C4610
9471FFB1217847FFFFFF081E7FFFFFF17877FFFFFF17887FFFFFF07F37FFFFFF178A7FFFFFF08047FFFFFF178C
7FFFFFF081AFFFC74FC02FFFC73FC0CFFFC74FC01FC00EE579087FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
```

Each Packet Size(): 230 bytes

EasPayload[0]:

```
D8B1AB0000C30000002896454153035257541C01656E67010000145245515549524544205745454B4C5
9205445535478000000000000000000000000000000000000000000000000000000000000000000000000
74776F726B7320484153204953535545442041205245515549524544205745454B4C592054455354204
64F522054484520464F4C4C4F57494E4720434F554E544945532F41524541533A2050696E616C3B204D
617269636F70612C20415A3B20416C7069
```

EasPayload[1]:

```
6E652C2043413B20415420343A313820504D204F4E204F435420322C203230313820454646454354495
64520554E54494C20343A333320504D2E204D4553534147452046524F4D20566563696D612E2003040C
15040C0D060C031E7FFFFFF1EF77FFFFFF1EF67FFFFFF1E607FFFFFF1E637FFFFFF1E5D7FFFFFF1E577FFFFFF1
E547FFFFFF1E4F7FFFFFF1E667FFFFFF1E697FFFFFF1E6C7FFFFFF07EB7FFFFFF07EE7FFFFFF1EE07FFFFFF1EE3
7FFFFFF07E77FFFFFF080C7FFFFFF17827FFFFFF
```

EasPayload[2]:

```
17847FFFFFF081E7FFFFFF17877FFFFFF17887FFFFFF07F37FFFFFF178A7FFFFFF08047FFFFFF178C7FFFFFF081
AFFFC74FC02FFFC73FC0CFFFC74FC01FC00EE579087FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
```

EAS Payload Length: 551 bytes

\*\*\*\*\*SCTE18 cable\_emergency\_alert()\*\*\*\*\*

```
table_ID = 11011000 [Decimal: 216]
sectionSyntaxIndicator = 1
zero = 0
reserved_ = 11
sectionLength = 000110101011 [Decimal: 427]
tableIdExtension = 0000000000000000
reserved_2 = 11
sequenceNumber = 00001 [Decimal: 1]
currentNextIndicator = 1
sectionNumber = 00000000
lastSectionNumber = 00000000
protocolVersion = 00000000
easEventId = 0010100010010110 [Decimal: 10390]
easOriginatorCode = 010001010100000101010011
easEventCodeLength = 00000011
easEventCode = 010100100101011101010100
natureOfActivationTextLength = 00011100
```

```

natureOfActivationText =
00000000101100101011011100110011100000001000000000000000000000101000101001001000101010
100010101010101001001010100100100010101000100000100000000000000000101110100010101000101010010
11010011000101100100100000001010100010001010101001101010100
alertMessageTimeRemaining = 01111000 [Decimal: 120]
eventStartTime = 00000000000000000000000000000000
eventDuration = 00000000000000000000000000000000
reserved_3 = 111111111111
alertPriority = 1111 [Decimal: 15]
detailsOobSourceId = 00001000000011111 [Decimal: 2079]
reserved_4 = 111111
detailsMajorChannelNumber = 0000000000 [Decimal: 0]
reserved_5 = 111111
detailsMinorChannelNumber = 0000000000 [Decimal: 0]
audioOobSourceId = 00001000000011111 [Decimal: 2079]
alertTextLength = 00000000011000101 [Decimal: 197]
alertText =
0000000010110010101101110011001110000000100000000000000000000010111010101011001100101011
000110110100101101101011000010010000001001100110010101110100011101110110111011100
10011010110111001100100000010010000100000101010011001000000100100101010011010100110
101010101000101010001000010000001000001001000000100100100010101010001010101010100
10010101001001000101010001000010000001010111010001010100010101001011010011000101100
10010000001010100010001010101001101010100001000000100011001001111010100100010000001
01010001001000010001010010000001000110010011110100110001001100010011110101011101001
00101001110010001110010000001000011010011110101010101001110010101000100100101000101
01010011001011110100000101010010010001010100000101010011001110100010000001010000011
01001011011100110000101101100001110110010000001001101011000010111001001101001011000
11011011110111000001100001001011000010000001000001010110100011101100100000010000010
11011000111000001101001011011100110010100101100001000000100001101000001001110110010
00000100000101010100001000000011010000111010001100010011100000100000010100000100110
10010000001001111010011100010000001001111010000110101010000100000001100100010110000
10000000110010001100000011000100111000001000000100010101000110010001100100010101000
01101010100010010010101011001000101001000000101010101001110010101000100100101001100
00100000001101000011101000110011001100110010000001010000010011010010111000100000010
01101010001010101001101010011010000010100011101000101001000000100011001010010010011
11010011010010000001010110011001010110001101101001011011011000010010111000100000
alertText ASCII:Vecima Networks HAS ISSUED A REQUIRED WEEKLY TEST FOR THE FOLLOWING
COUNTIES/AREAS: Pinal; Maricopa, AZ; Alpine, CA; AT 4:18 PM ON OCT 2, 2018
EFFECTIVE UNTIL 4:33 PM. MESSAGE FROM Vecima.

locationCodeCount = 00000011 [Decimal: 3]
*****Location info[0]*****
stateCode = 00000100 [Decimal: 4]
countySubdivision = 0000 [Decimal: 0]
reserved_6 = 11
countyCode = 0000010101 [Decimal: 21]
*****Location info[1]*****
stateCode = 00000100 [Decimal: 4]
countySubdivision = 0000 [Decimal: 0]
reserved_6 = 11
countyCode = 0000001101 [Decimal: 13]
*****Location info[2]*****
stateCode = 00000110 [Decimal: 6]
countySubdivision = 0000 [Decimal: 0]

```

```

reserved_6 = 11
countyCode = 0000000011 [Decimal: 3]
*****End of Locations [Total: 3]*****

exceptionCount = 00011110 [Decimal: 30]
*****Exception Channel[0]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111011110111 [Decimal: 7927]
*****Exception Channel[1]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111011110110 [Decimal: 7926]
*****Exception Channel[2]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111001100000 [Decimal: 7776]
*****Exception Channel[3]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111001100011 [Decimal: 7779]
*****Exception Channel[4]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111001011101 [Decimal: 7773]
*****Exception Channel[5]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111001010111 [Decimal: 7767]
*****Exception Channel[6]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111001010100 [Decimal: 7764]
*****Exception Channel[7]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111001001111 [Decimal: 7759]
*****Exception Channel[8]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111001100110 [Decimal: 7782]
*****Exception Channel[9]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111

```

```

exceptionOobSourceId = 0001111001101001 [Decimal: 7785]
*****Exception Channel[10]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111001101100 [Decimal: 7788]
*****Exception Channel[11]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0000011111101011 [Decimal: 2027]
*****Exception Channel[12]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0000011111101110 [Decimal: 2030]
*****Exception Channel[13]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111011100000 [Decimal: 7904]
*****Exception Channel[14]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001111011100011 [Decimal: 7907]
*****Exception Channel[15]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0000011111100111 [Decimal: 2023]
*****Exception Channel[16]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0000100000001100 [Decimal: 2060]
*****Exception Channel[17]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001011110000010 [Decimal: 6018]
*****Exception Channel[18]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001011110000100 [Decimal: 6020]
*****Exception Channel[19]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0000100000011110 [Decimal: 2078]
*****Exception Channel[20]*****
inBandReference = 0
reserved_7 = 1111111

```

```

reserved_10 = 1111111111111111
exceptionOobSourceId = 0001011110000111 [Decimal: 6023]
*****Exception Channel[21]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001011110001000 [Decimal: 6024]
*****Exception Channel[22]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 00000111111110011 [Decimal: 2035]
*****Exception Channel[23]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001011110001010 [Decimal: 6026]
*****Exception Channel[24]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0000100000000100 [Decimal: 2052]
*****Exception Channel[25]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0001011110001100 [Decimal: 6028]
*****Exception Channel[26]*****
inBandReference = 0
reserved_7 = 1111111
reserved_10 = 1111111111111111
exceptionOobSourceId = 0000100000011010 [Decimal: 2074]
*****Exception Channel[27]*****
inBandReference = 1
reserved_7 = 1111111
reserved_8 = 111111
exceptionMajorChannelNumber = 0001110100 [Decimal: 116]
reserved_9 = 111111
exceptionMinorChannelNumber = 0000000010 [Decimal: 2]
*****Exception Channel[28]*****
inBandReference = 1
reserved_7 = 1111111
reserved_8 = 111111
exceptionMajorChannelNumber = 0001110011 [Decimal: 115]
reserved_9 = 111111
exceptionMinorChannelNumber = 0000001100 [Decimal: 12]
*****Exception Channel[29]*****
inBandReference = 1
reserved_7 = 1111111
reserved_8 = 111111
exceptionMajorChannelNumber = 0001110100 [Decimal: 116]
reserved_9 = 111111
exceptionMinorChannelNumber = 0000000001 [Decimal: 1]

```

```

*****End of Exception Channels [Total:
30]*****
reserved_11 = 111111
descriptorsLength = 0000000000
crc_32 = 11101110010101111001000010000111
Crc32 Hex: EE579087
Padded: 121 bytes
Total Length = 427 + 121 + 3 = 551 bytes as compared to EAS Payload Length: 551
bytes
Note: Padding bytes are not counted in <sectionLength>
PID = 0x1FFB

*****Packet Parsing Finished Successfully!!*****

```

## 7 Locations codes

```
$ java -jar EasSimulatorCli-2.2.jar -l
```

### Available Location Codes:

```

004021: Pinal, AZ
004013: Maricopa, AZ
006003: Alpine, CA
000000: United States
006000: California
006007: Butte, CA
002000: Alaska
002068: Denali, AK
010000: Delaware
025000: Massachusetts
012000: Florida
008000: Colorado
032000: Nevada
021000: Kentucky
021001: Adair, KY
021003: Allen, KY
021005: Anderson, KY
021007: Ballard, KY
021009: Barren, KY
021011: Bath, KY
021013: Bell, KY
021015: Boone, KY
021017: Bourbon, KY
021021: Boyle, KY
021023: Bracken, KY
021025: Breathitt, KY
021027: Breckinridge, KY
021029: Bullitt, KY
021031: Butler, KY
021033: Caldwell, KY
021035: Calloway, KY

```

## 8 Alert Codes

```
$ java -jar EasSimulatorCli-2.2-linux.jar -c
```

#### SCTE18 Alert Codes:

RWT: REQUIRED WEEKLY TEST  
RMT: REQUIRED MONTHLY TEST  
EAT: Emergency Action Termination  
EAN: Emergency Action Notification  
NIC: National Information Center  
NPT: National Periodic Test  
ADR: Administrative Message  
AVW: Avalanche Warning  
AVA: Avalanche Watch  
BZW: Blizzard Warning  
CAE: Child Abduction Emergency  
CDW: Civil Danger Warning  
CEM: Civil Emergency Message  
CFW: Coastal Flood Warning  
CFA: Coastal Flood Watch  
DFW: Dust Storm Warning  
EQW: Earthquake Warning  
EVI: Evacuation Immediate  
FRW: Fire Warning  
FFW: Flash Flood Warning  
FFA: Flash Flood Watch  
FFS: Flash Flood Statement  
FLS: Flood Statement  
FLW: Flood Warning  
FLA: Flood Watch  
HMW: Hazardous Materials Warning  
HWW: High Wind Warning  
HWA: High Wind Watch  
HUW: Hurricane Warning  
HUA: Hurricane Watch  
HLS: Hurricane Statement  
LEW: Law Enforcement Warning  
LAE: Local Area Emergency  
NMN: Network Message Notification  
TOE: 911 Telephone Outage Emergency  
NUW: Nuclear Power Plant Warning  
DMO: Practice/Demo Warning  
RHW: Radiological Hazard Warning  
SVR: Severe Thunderstorm Warning  
SVA: Severe Thunderstorm Watch  
SVS: Severe Weather Statement  
SMW: Special Marine Warning  
SPS: Special Weather Statement  
TOR: Tornado Warning  
TOA: Tornado Watch  
TRW: Tropical Storm Warning  
TRA: Tropical Storm Watch  
TSW: Tsunami Warning  
TSA: Tsunami Watch  
VOW: Volcano Warning  
WSW: Winter Storm Warning

WSA: Winter Storm Watch

## 9 System Requirements

openjdk version "1.8.0\_191"

## 10 Network Permission

The program requires packet capture permission if running on a linux machine:

Give permission:

```
setcap cap_net_raw,cap_net_admin=eip /usr/lib/jvm/java-8-openjdk-amd64/jre/bin/java
```

Check the permission:

```
getcap /usr/lib/jvm/java-8-openjdk-amd64/jre/bin/java
```

Note: Make sure to provide the correct jdk path

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