Strategy Information Request

Battery Box 1
==========
Voltage of each module
Temp of each module
Pack Current
CBS

Battery Box 2
==========
Voltage of each module
temp of each module

Motor Controller
==========
Speed
Motor Current
Energy
Uptime

MPPT (1,2,3,4)
==========
Output current

Communications Definition

Battery Voltages
Battery voltages will have the following format.

v[box number] [bps module] = (voltage in milli volts)

(Box number) = This will be the number “0” or “1”.
(bps module) = This will be a number between 0 and 32.

example v[0][04] = 3133
module 4 in box 0 has a voltage of 3.133 volts

example v[1][19] = 3133
module 19 in box 1 has a voltage of 3.133 volts

Battery Temperature
Battery temperature will have the following format.

t[box number][bps module] = temperature in C

(Box number) = This will be the number “0” or “1”.
(bps module) = This will be a number between 0 and 32.

example: t[0][07] = 45
Module 7 in box 0 has a temperature of 45 C

example: t[1][20] = 22
Module 20 in box 1 has a temperature of 22 C

Battery Current

Battery Current will have the following format.

C = (current in ten milli amp)

example: C = 100
The battery current is 1 Amp.

Example : C = 1021
The battery current is 10.21 Amps

Motor controller velocity
The velocity messages will have the following form

S = (speed)

Speed will be the speed in hundred millimeter per second.

example S = 134
The the motor controller thinks the car is moving at a speed of 13.4 m/s. Please convert to MPH for easy.

Motor Controller Energy

E = (energy)

Energy is the is total energy in amp hours.
NOTE, this will not reset when the car restarts. It will be like an odometer for current. So the first reading should be subtracted from the later readers to calculate current used.

Example below:
E = 1703
…
…
…
E = 1763

There have been 60 amp hours spent on the since the start of the trip.

MPPT data
The MPPT data will be in the following form. The most important part of the tracker data is the out current. The out current must be calculated from the in current, and the out voltage, and in voltage.

M[(tracker number)] = (in voltage) (out voltage) (in current)

tracker number = number between 0 and 3, including 0 and 3
in voltage = voltage in volts
out voltage = voltage in volts
in current = current in ten milliamps

The out current can be calculated by multiplying the in current by the in voltage and then dividing by the out voltage. Calculate the power in by multiplying volts by amps, then divide by the out voltage.

example: M[0] = 22 91 140
tracker 0 has a in voltage of 22, an out voltage of 91 and a current of 1.40 amps.
The out current for tracker 0 is (22 volts * 1.4 amps / 91 volts) = 0.338 amps.

Example

```
M[0] 44 14 1
M[1] 55 15 2
M[2] 66 16 3
M[3] 77 17 4
C = 54
S = 98
E = 3000
V[0][00] = 3221
V[0][01] = 3111
V[0][02] = 3890
V[0][03] = 3221
V[0][04] = 3111
V[0][05] = 3898
V[0][06] = 3133
V[0][07] = 3133
V[0][08] = 3890
V[0][09] = 3221
V[0][10] = 3111
V[0][11] = 3890
V[0][12] = 3221
V[0][13] = 3111
V[0][14] = 3898
V[0][15] = 3133
V[0][16] = 3133
V[0][17] = 3890
V[0][18] = 3133
V[0][19] = 3133
V[0][20] = 3890
C = 54
S = 98
E = 3000
V[1][00] = 3221
V[1][01] = 3111
V[1][02] = 3890
V[1][03] = 3221
V[1][04] = 3111
V[1][05] = 3898
V[1][06] = 3133
V[1][07] = 3133
V[1][08] = 3890
V[1][09] = 3221
V[1][10] = 3111
V[1][11] = 3890
V[1][12] = 3221
V[1][13] = 3111
V[1][14] = 3898
V[1][15] = 3133
V[1][16] = 3133
V[1][17] = 3890
V[1][18] = 3133
V[1][19] = 3133
V[1][20] = 3890
M[0] 44 14 1
M[1] 55 15 2
M[2] 66 16 3
M[3] 77 17 4
C = 88
```

S = 56
E = 3044
T[0][00] = 31
T[0][01] = 31
T[0][02] = 30
T[0][03] = 31
T[0][04] = 31
T[0][05] = 38
T[0][06] = 33
T[0][07] = 33
T[0][08] = 30
T[0][09] = 31
T[0][10] = 31
T[0][11] = 30
T[0][12] = 31
T[0][13] = 31
T[0][14] = 38
T[0][15] = 33
T[0][16] = 33
T[0][17] = 30
T[0][18] = 33
T[0][19] = 33
T[0][20] = 30
C = 44
S = 78
E = 3077
T[1][00] = 31
T[1][01] = 31
T[1][02] = 30
T[1][03] = 31
T[1][04] = 31
T[1][05] = 38
T[1][06] = 33
T[1][07] = 33
T[1][08] = 30
T[1][09] = 31
T[1][10] = 31
T[1][11] = 30
T[1][12] = 31
T[1][13] = 31
T[1][14] = 28
T[1][15] = 33
T[1][16] = 33
T[1][17] = 20
T[1][18] = 33
T[1][19] = 33
T[1][20] = 33
M[0] 44 14 1
M[1] 55 15 2
M[2] 66 16 3
M[3] 77 17 4
C = 33
S = 43
E = 3100