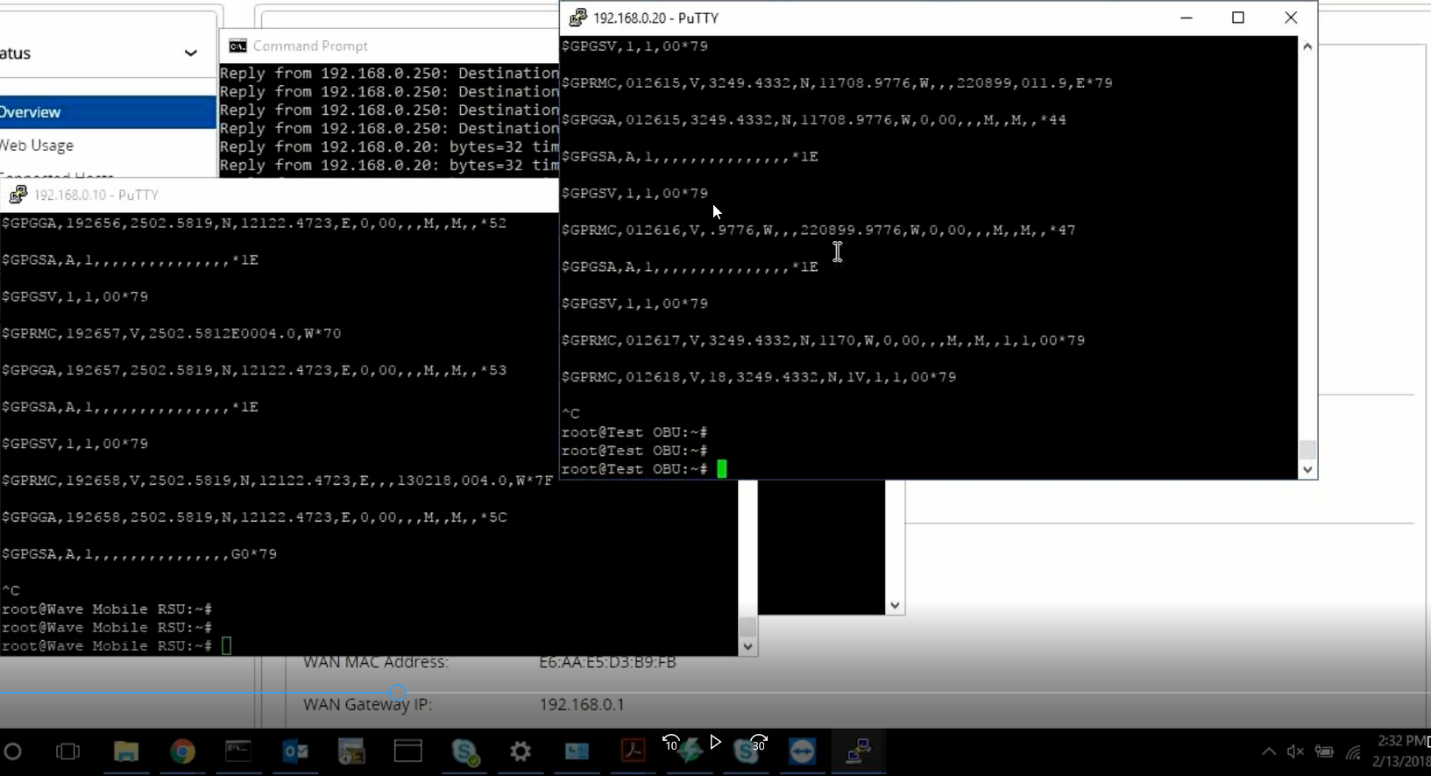
Validation Laboratory Testing

Week of February 12, 2018

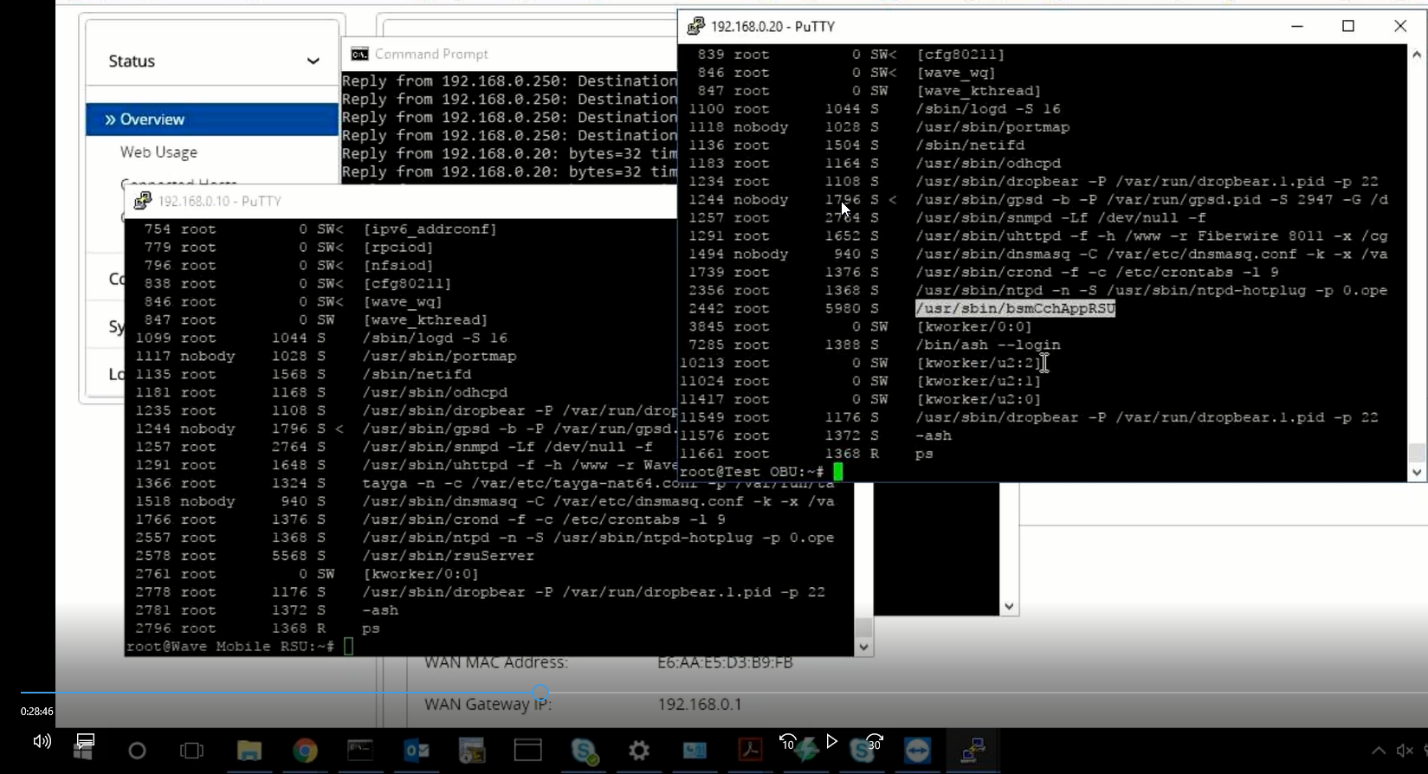
**Configuration/Integration Of Units**

Wavemobile RSU/OBU

1. Both units come from factory as a “RSU”, configured one of the radios for a “OBU”
2. Configured IP for RSU: 192.168.0.10
3. Configured IP for OBU: 192.168.0.20
4. When configuring the OBU for IP, a SSH Session is required. RSU is from the GUI
5. Ensure GPS antenna is installed prior to startup or GPS Driver
6. On the GUI from the OBU we were able to verify connection between the OBU and RSU by the signal strength and the MAC Address of the RSU being displayed (same screenshot from 1/29/18)
7. To initialize GPS Receiver without Rebooting is: stty -F /dev/tttyS0 4800
8. To display GPS Coordinates of units use command: cat /dev/tttS0

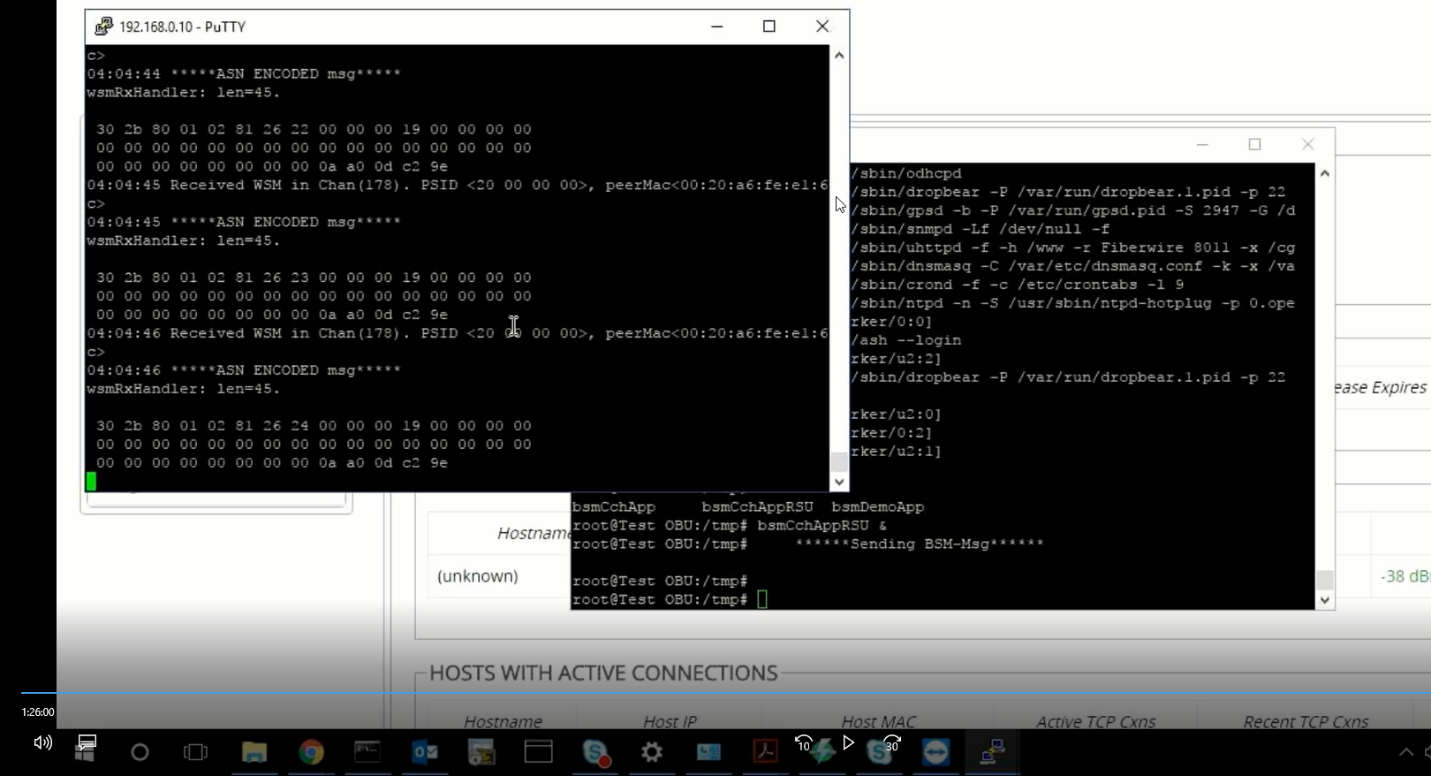


1. To confirm BSM Message are being transmitted on RSU use an SSH session to verify RSU Server Service is running: /usr/sbin/rsuserver & and on OBU is: usr/sbin/bsmCchAppRSU



1. To verify the BSM messages are being transmitted between the RSU and OBU you must enable to the Debugging file application and use the following command:

tail -f waveDebugAppFile.log



1. \*\*\*Debug mode is only for troubleshooting and all enabled processes (waveDebug) will need to be stopped by using the killall command on both RSU and OBU.

Commsignia RSU/OBU

1. RSU Unit would not power up – No indicator LEDs.
2. The Ethernet interface was not active on the OBU and Commsignia was able to assign an IP address to the OBU via the console port. Commsig on how to activate it. To enable the console port a driver will need to be downloaded for USB Driver. Download and install the CP210x USB to UART Bridge VCP Drivers from https://

www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers

1. Parameters to access the unit is COM 4 – Baud 115200
2. To set the static IP address use the following command:

vi /etc/config/network

1. Once in submenu use the following commands:

config interface 'wan'

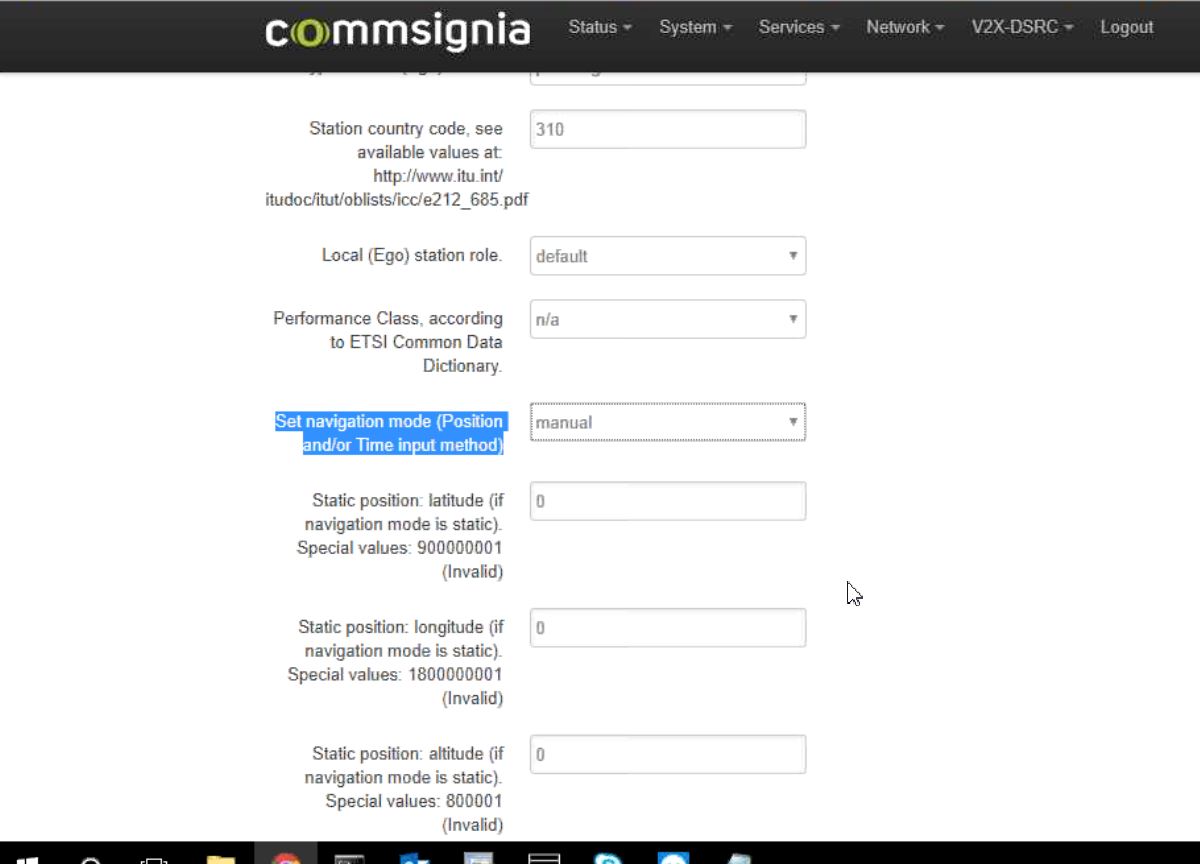
option ifname 'eth0'

option macaddr '70:B3:XX:XX:XX:XX'

option proto 'static'

option netmask '255.255.255.0'

option ipaddr '192.168.0.54

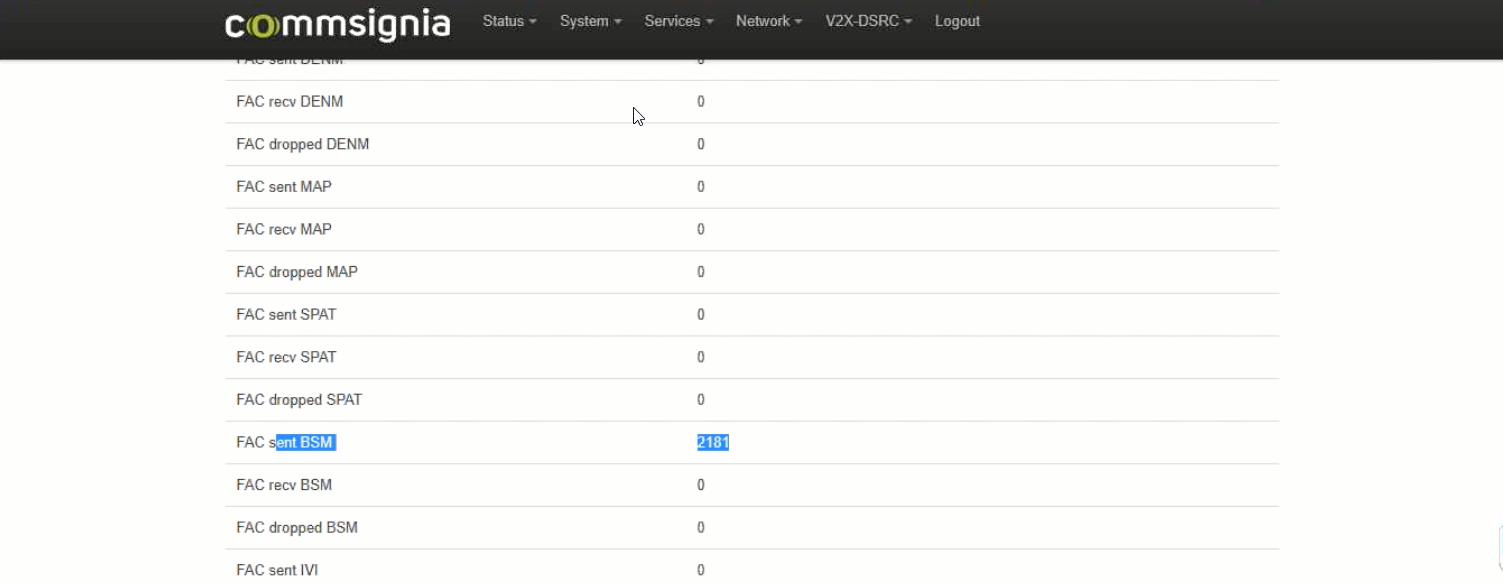
1. Configured IP for the OBU: 192.168.0.54
2. Access the OBU device via the WebGUI.
3. Enable GPS device by accessing the DSRC menu, then STACK, and Set Navigation to Real.
4. 
5. Enable Applications (SPaT, BSM, TIM, and EVA)

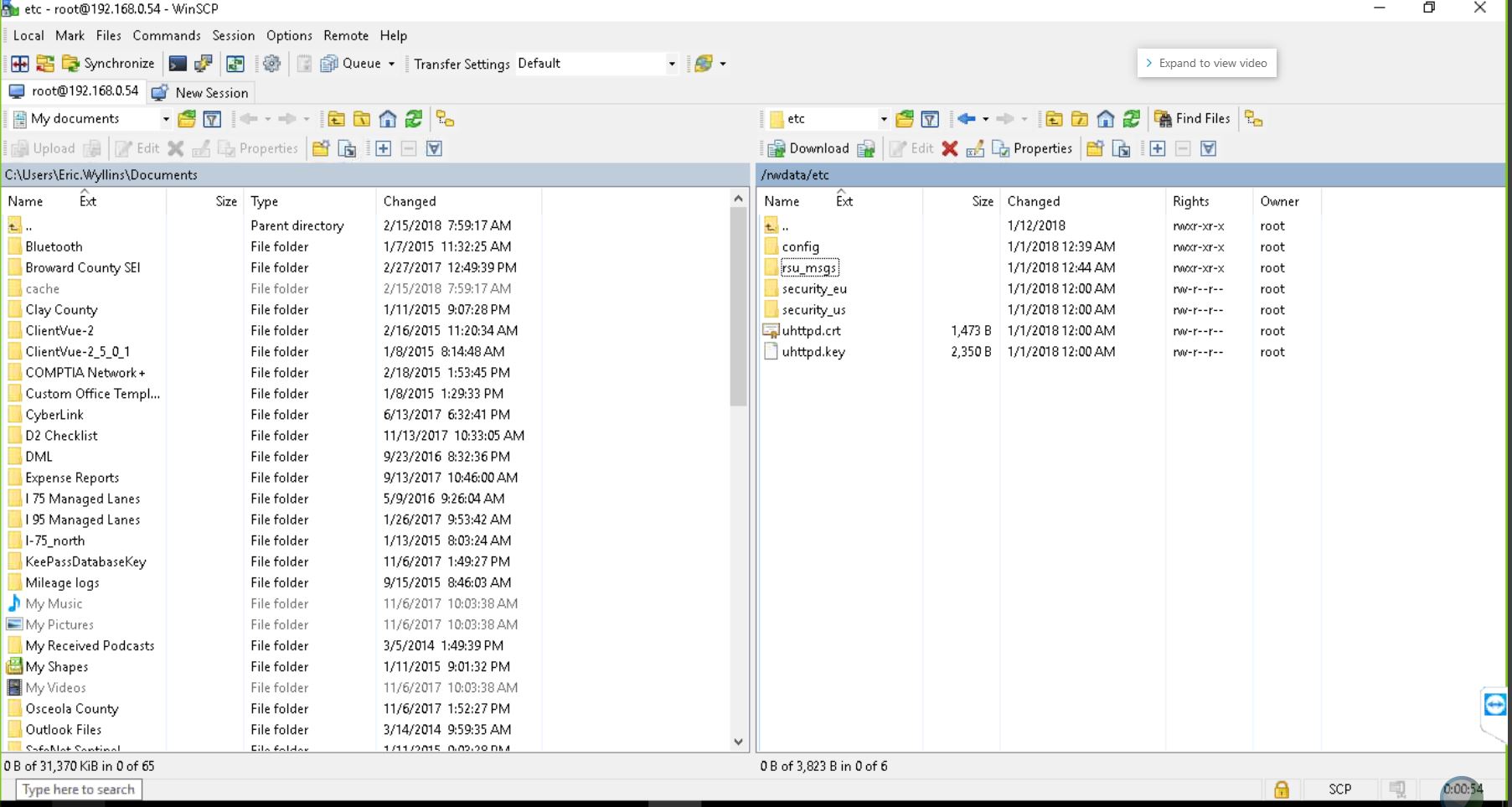


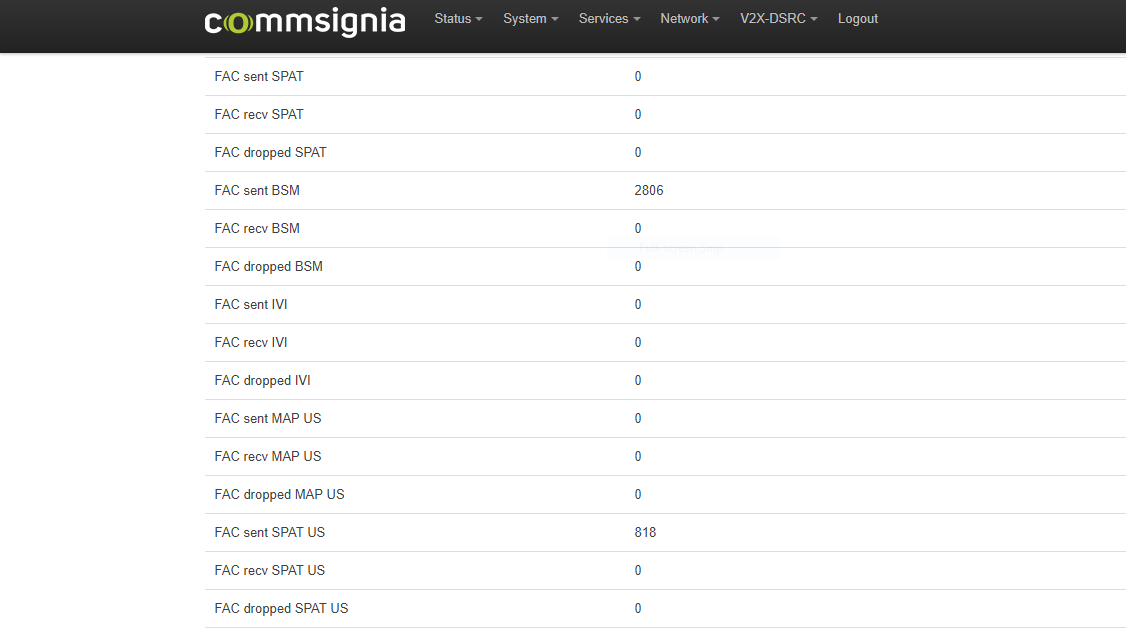
1. Make sure the Enable or Disable loading of RSU Trigger from File box is checked.



1. To verify test BSM messages are being transmitted to unit. Navigate to the V2X-DSRC tab and click on status. Scroll down until you see Sent



1. Set TrafficWare controller IP address and UDP Port. Both UDP ports must be the same between the controller and RSU for SPaT Data to send/received.
2. Upload test intersection file (previous Las Vegas Intersection) using Microsoft WinSCP to unit.
3. Verify of SPaT Data Received via the WebGUI.



Week of February 12, 2018

**Inventory Equipment**

One (1) Commsignia RSU Assemblies and each assembly includes:

* 1. One (1) RSU External Enclosure -SN # 1711401000397
  2. One (1) Mounting Kits
  3. Two (2) DSRC Antennas
  4. One (1) GPS Antenna with cable

One (1) OBU Assemblies and each assembly includes:

* 1. One (1) OBU External Enclosure – SN # 1711401000241
  2. One (1) 12V DC Power Supply
  3. One (1) Vehicle Cigarette Lighter Power Cord
  4. Three (3) Micro Antennas
  5. One (1) Combined Vehicle Antenna
  6. One (1) Mounting Kits