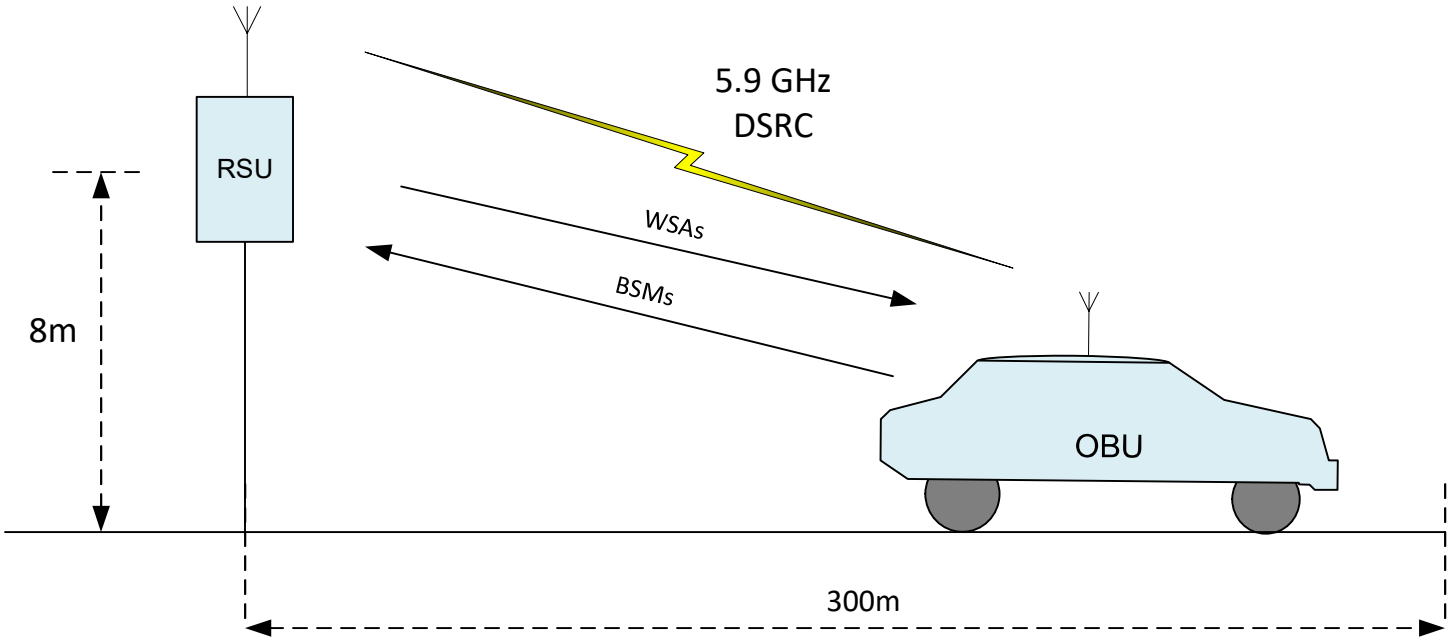
V2I Field Test

(RSU 4.1 spec, section 3.6.1 – Radio Performance)

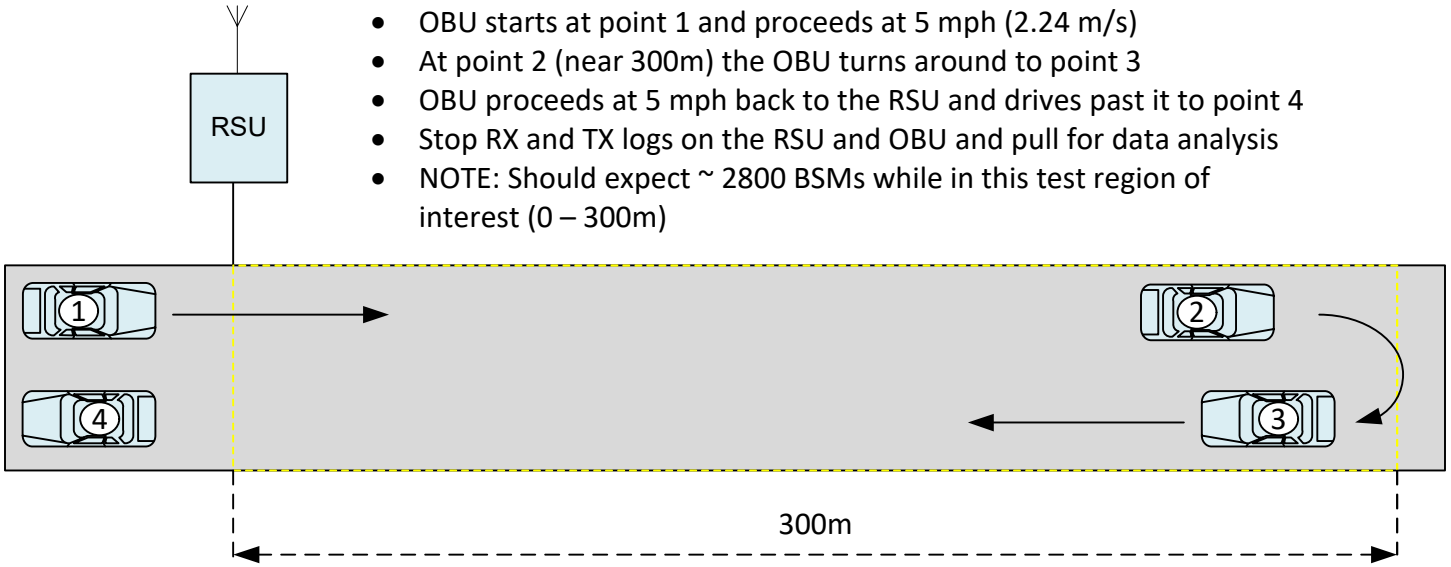
RSU Field Test Configuration:

- RSU is setup to transmit WSAs on channel 178 at 10 Hz
- RSU is installed at 8m centerline height
- OBU is setup to transmit BSMs on channel 172 at 10 Hz



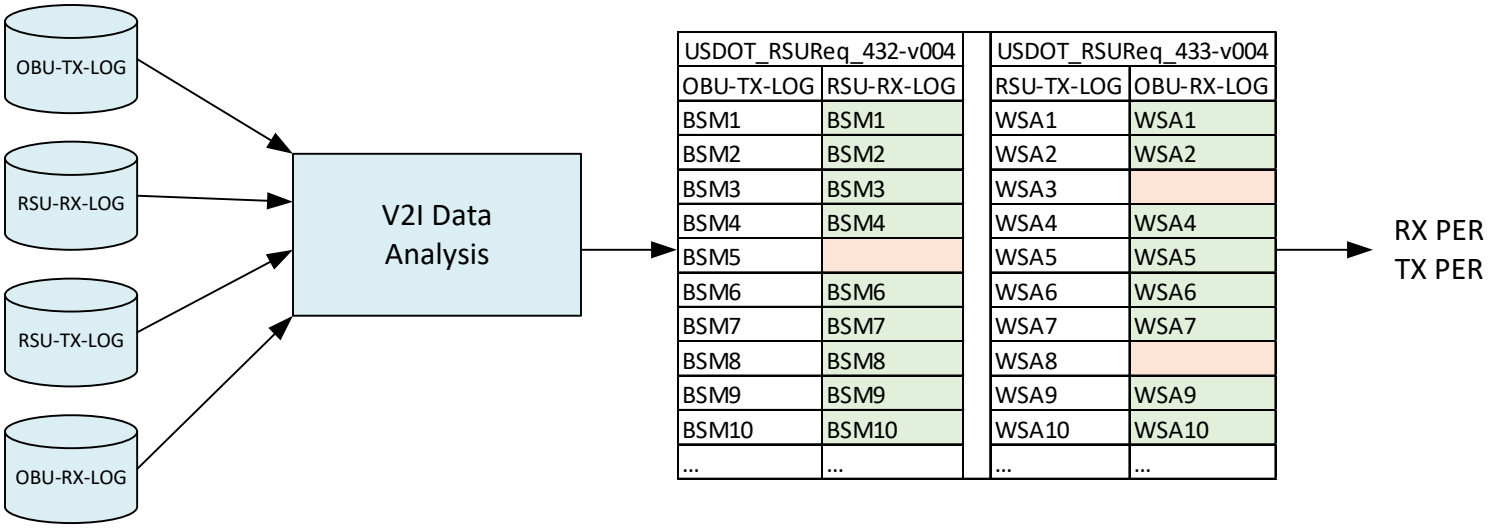
RSU Field Test Data Collection:

- Begin RX and TX logs on RSU and OBU
- OBU starts at point 1 and proceeds at 5 mph (2.24 m/s)
- At point 2 (near 300m) the OBU turns around to point 3
- OBU proceeds at 5 mph back to the RSU and drives past it to point 4
- Stop RX and TX logs on the RSU and OBU and pull for data analysis
- NOTE: Should expect ~ 2800 BSMs while in this test region of interest (0 – 300m)



RSU Field Test Data Analysis:

- Analyze the TX and RX logs from both the RSU and OBU
- Use the OBU-TX-LOG to capture the timeframe that the OBU was in the test region of interest (0 – 300m)
- Crop the data from the other 3 logs to this timespan
- Analyze the OBU transmit log and the RSU receive log to determine RX PER
- Analyze the RSU transmit log and the OBU receive log to determine TX PER
- Anything > 10% PER fails



USDOT_RSUReq_432-v004	
OBU-TX-LOG	RSU-RX-LOG
BSM1	BSM1
BSM2	BSM2
BSM3	BSM3
BSM4	BSM4
BSM5	
BSM6	BSM6
BSM7	BSM7
BSM8	BSM8
BSM9	BSM9
BSM10	BSM10
…	…

USDOT_RSUReq_433-v004	
RSU-TX-LOG	OBU-RX-LOG
WSA1	WSA1
WSA2	WSA2
WSA3	
WSA4	WSA4
WSA5	WSA5
WSA6	WSA6
WSA7	WSA7
WSA8	
WSA9	WSA9
WSA10	WSA10
…	…