HACKTHEMACHINE
BOSTON 2017

ADVANCED CHALLENGE

Welcome to Hack the Machine's Advanced Track. In this Track, you will be undergoing a series of challenges that will test your abilities. There will be 10 total challenges. This is all the information you get. Below are a list of materials we recommend you bring to help you progress through each challenge.

RECOMMENDED MATERIALS

Provided Hardware

The following hardware will be available in limited quantities at the event:

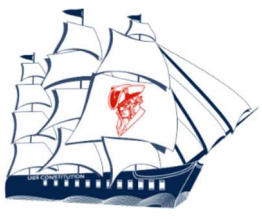
Hardware	Interface Type	Useful Against
Ettus Research USRP N210	RF (Wireless)	Voyage, IT
UBX 60-6000 MHz Daughterboard	RF (Wireless)	Voyage, IT
RTL-SDR	RF (Wireless)	Voyage, IT
NGT-1 USB NMEA2000 Converter	NMEA2000, USB A	Engineering

Recommended Hardware

It is recommended you bring the following hardware with you:

Hardware	Interface Type	Notes
Laptop	Varies by manufacturer	See software list below
Cat5 Ethernet Cable	Ethernet	Recommended 30feet or more

The following optional hardware will support connections to the TRUDI CAN bus and various wireless navigation and networking sensors.



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Hardware	Interface Type	Notes
NMEA2000 to USB Converter	NMEA2000, USB A	Recommended NGT-1 USB
CAN BUS Analyzer	Serial	Recommended Microchip CAN Analyzer or other with SocketCAN support
SDR and Antennae	RF (Wireless)	Recommended N210
External Network Interface Card	RF (Wireless)	Packet Injection Capable

Recommended Software Defined Radio (SDR) Resources

The following are links to recommended resources for Software Defined Radio (SDR).

Wikipedia – Digital Signal Processing
The Scientist and Engineer's Guide to Digital Signal Processing
GNURadio
AIS Messages
U.S. VHF Channels
DSC Specification
Wikipedia – IEEE 802.11
Github - GNU Radio Module for RTL SDR
Github – GNU Radio Module for AIS TX
Github – GNU Radio Module for AIS RX
Github – GNU Radio Module for WiFi TX/RX
Open Charting Plotting Navigation Software for AIS RX
GNURadio.org – Building an FM Receiver for VHF Radio RX
OpenDigitalRadio – Building an FM Transmitter for VHF Radio TX