BACKGROUND

DoIP (Diagnose Over IP) is a new communication layer introduced in Audi in their MLB-evo platform. It incapsulates the ISO-TP diagnostic protocol into classic TCP/IP communication stack. Principle is to connect car to diagnostics equipment using as simple as possible interface, increase the data transfer ratio and improve the flexibility.

SUPPORTED CARS

Supported cars are mainly the MLB-evo platform:

- Audi Q7 4M
- Audi A4/A5 8W
- Audi Q5 FY0
- Bentley Bentayga
- Future MLB-evo models (Audi A8,A6,A7,Q8)

with gateway control unit 8Wx907468x

NETWORK REQUIREMENTS

To work with DoIP protocol your network-related hardware and software must :

- Support Auto-IP or DHCP functions
- Pass connections on / to ports 13400 UDP and 13400 TCP
- Support UDP broadcasts to broadcast address 255.255.255.255

EXAMPLE NETWORK DIAGRAMS

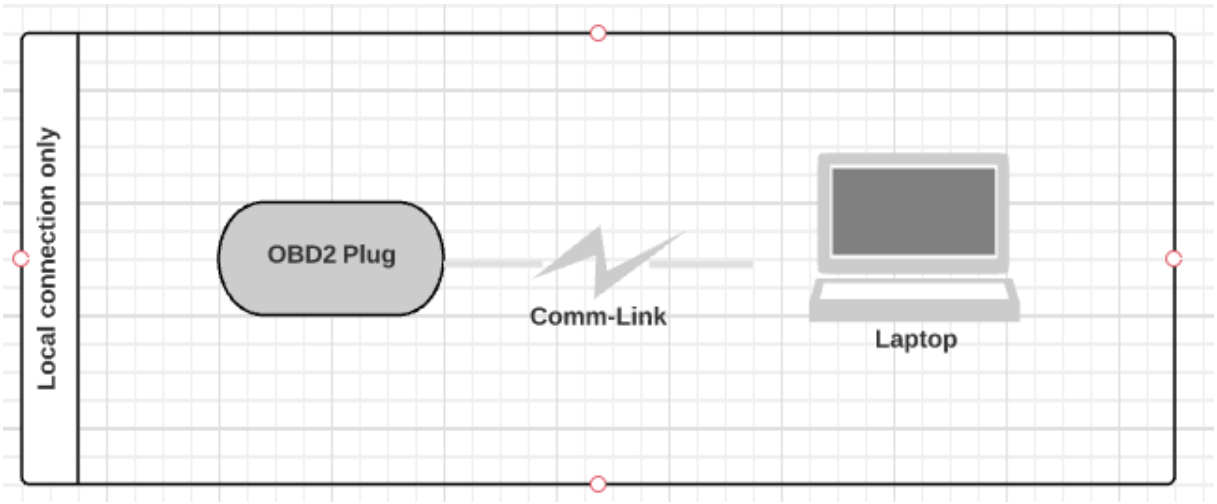
To connect to car you have to use the Ethernet-OBD cable. Contact your seller for details and quote.

The cable with end with a standard RJ45 plug, which can you:

- Plug directly to your PC
- Plug to router
- Plug to Wifi-accesspoint

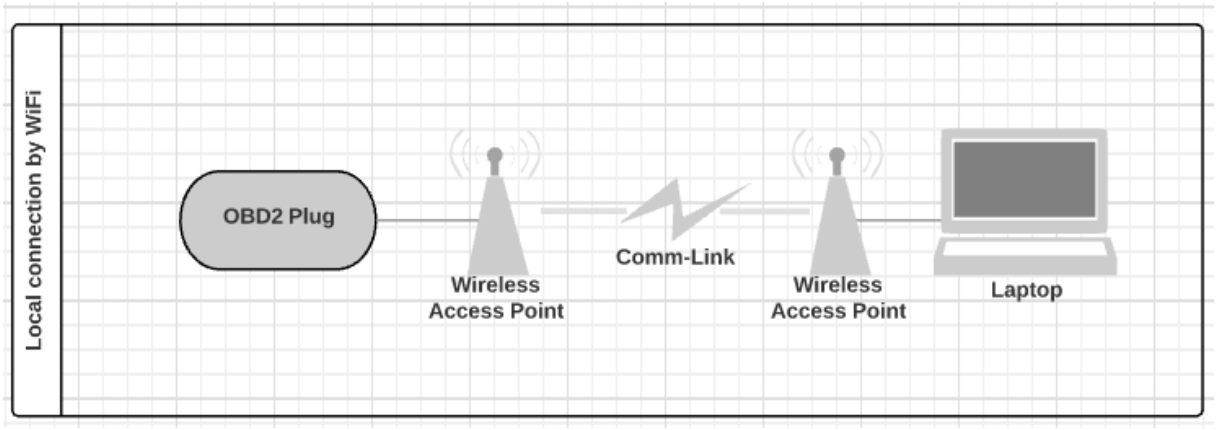
Thanks to the flexibility of the TCP/IP you can then “talk” to car in many ways, depending on your needs. Some examples follow.

DIRECT CONNECTION



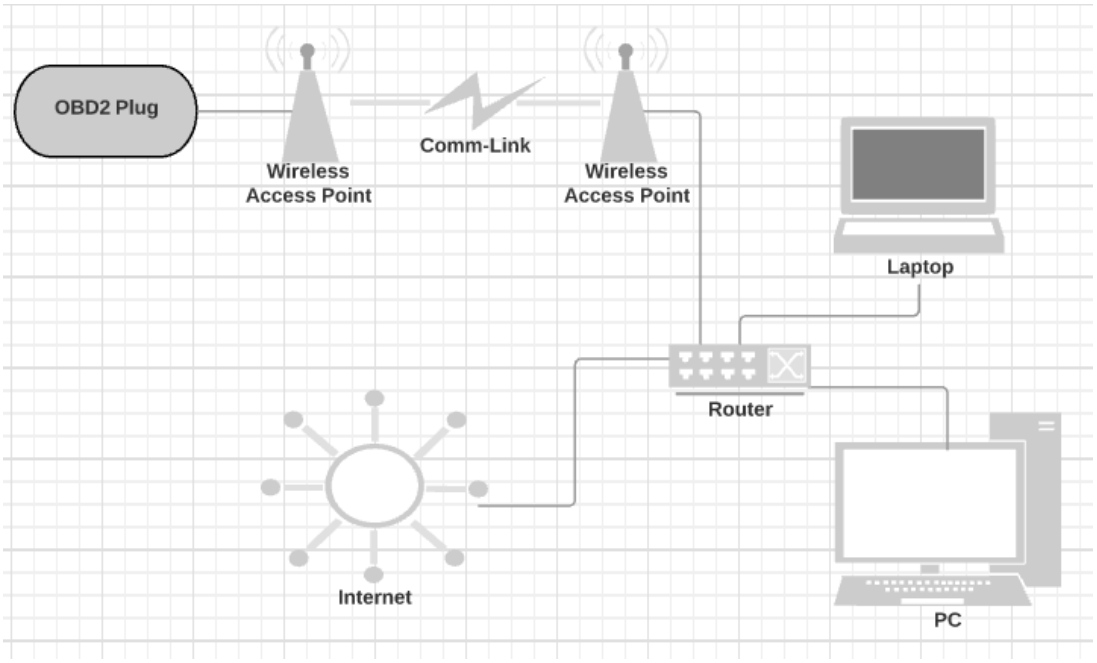
In this scenario car is directly connected to your PC. IP-Assignment is done by a AutoIP standard which is fully supported by Windows OSes. Make sure that any software-Firewall will accept incoming and outgoing connections to port 13400 UDP and TCP

DIRECT CONNECTION BY WIFI



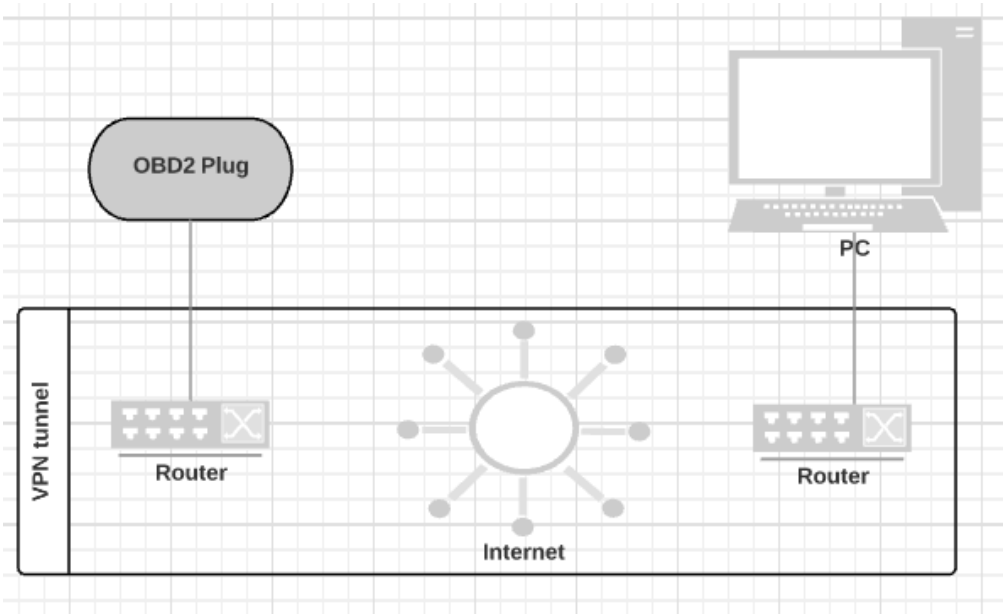
In this scenario car is connected to wireless access point which is connected in client mode to another AP and then to PC. Depending AP configuration (DHCP server enabled or not) the IP-assignment can be done by AutoIP or DHCP. Both car and PC has to be in same network segment to enable the UDP broadcasts

CONNECTION WITH A ROUTER



Typical network diagram in small offices, workshops etc. This time router is responsible with DHCP-address assignment, the AP in client mode then connects car to rest of the infrastructure. Then VCP installed in PC or laptop will be able to communicate with a car.

REMOTE VPN CONNECTION



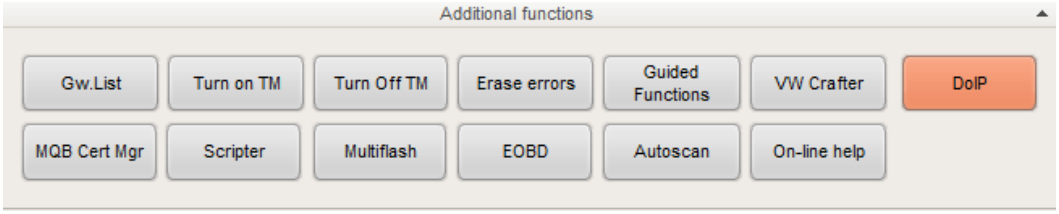
Advanced topology. The local network is connected to remote network using VPN-Tunnel, which logically extends local network to remote location. You can then diagnose a car located hundreds kilometers away exactly in the same way like in local garage. Many modern routers have VPN functionality built-in, in other case

you can use a professional solutions like Checkpoint VPN, free software implementations in Raspberry Pi or even hidden Windows VPN option. (example: http://www.howtogeek.com/221001/how-to-set-up-your-own-home-vpn-server/)

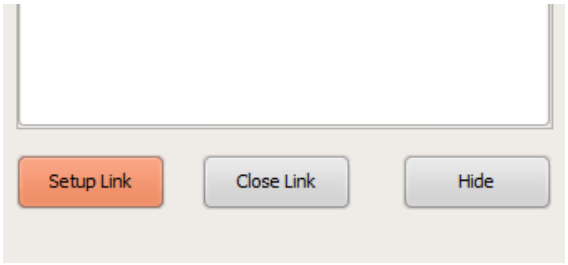
HOW TO USE

Pretty straightforward.

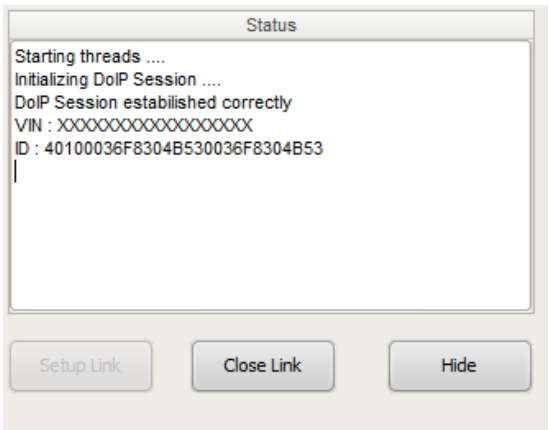
1. Run VCP v8+
2. Prepare the connection to car, turn ignition on, verify, that physical link goes up.
3. Click on DoIP button



4. Click on “Setup Link”



5. Wait until connection is established



Once connection is established, you can hide the window using “hide” button and use VCP in the regular way. All functions (diagnose / flash / parametrization / scripter) work with DoIP.

6. To stop the link and return to CAN/Kline communication simply click on “close link”

FINAL WORDS

DoIP is a future, no doubt. VCP is the first, cheap solution which supports DoIP in VAG diagnostics. Please note, that despite of very robust TCP/IP protocol, stable connection is crucial to safe DoIP operation , especially during flashing. Use good cables and sockets, configure firewalls properly and then you’ll be definitely happy with this newest technology in your workshop/home/garage ☺

Have FUN !