

The current vehicles are in the Telnet's/HTTP's era:  
cryptography should be embedded in the autonomous vehicles

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Matthew Hutson wrote an article entitled "A matter of trust," published in Science (1). Experts did not persuade skeptics about autonomous vehicles. Many of vehicle experts have inherently had a lack of knowledge of security issues (2, 3). Because, the OBD-II specification is suddenly made mandatory for all cars sold in the United States since 1996. The European Union makes EOBD mandatory for all gasoline (petrol) vehicles sold in the European Union since 2001. After the advent of OBD-II/EOBD, the network (data links) security issues must be considered for the safety of all vehicles with/without autonomous functions. OBD-II and EOBD have no security provided where the third party can see and sniff what is going on in the data links since all the data is transmitted in plain text including passwords like Telnet. SSH is a cryptographic network protocol for operating network services securely over an unsecured network. In these days, the lay public knows the difference between "HTTP" and "HTTPS" for secured web shopping/banking. Cryptography like SSH/HTTPS should be embedded in both the current vehicles and the autonomous vehicles.

Once tentative apprehensiveness is established by the lay public, it is extremely hard to change their beliefs (4). In order to overcome the apprehensiveness of the lay public, the technology innovations (from Telnet to SSH, HTTP to HTTPS) are immediately needed in the autonomous vehicles. In other words, OBD-II/EOBD must be scrapped ASAP.

#### References:

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<http://science.sciencemag.org/content/352/6293/1573/tab-e-letters>
3. Y. Takefuji, "Connected vehicle security," to appear in IEEE Technology and Society Magazine in 2018.
4. Y. Takefuji, "Special cares for lay public are needed for correcting scientific facts," Science (eLetter, 17 Nov 2017)  
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