Black box is not safe at all.

by Yoshiyasu Takefuji

Before discussing the social dilemma of autonomous vehicles [1] , we must remove all black boxes from any system for security reason.

The OBD-II specification is 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.

The OBD-II and EOBD specifications both contain black boxes where all car manufactures cannot full-test the black boxes. Besides, they have no security provided in the OBD-II and EOBD specifications. In other words, for more than fifteen years with neglecting security problems, we have been driving naked cars.

In the age of autonomous cars, we must reconsider such unsecure mandatory specifications. Why have we been forced to live with black-box testing without understanding the details of the black-box? We all know that black-box testing is not suitable for identifying the defects (hardware/software) in the black box.

However, open source is not automatically more secure than closed source[2]. The difference is with open source code you can verify for yourself (or pay someone to verify for you) whether the code is secure[2]. With closed source programs you need to take it on faith that a piece of code works properly, open source allows the code to be tested and verified to work properly[2]. Open source also allows anyone to fix broken code, while closed source can only be fixed by the vendor[1].

The open source hardware/software movement has been navigating us a good direction to get rid of all black boxes and to enhance security and incremental innovations.

References:

1. Jean-François Bonnefon, et al., The social dilemma of autonomous vehicles, *Science* 24 Jun 2016:Vol. 352, Issue 6293, pp. 1573-1576

2.
http://www.infoworld.com/article/2985242/linux/why-is-open-source-software-more-secure.html