Computers with Tailfins?

Scott Davidson

This special issue of IEEE Design&Test is about test and reliability of automotive electronics. It seems from looking at the papers that many of our test techniques work quite well in cars. Sure, the environment under the hood is even harsher than what my smartphone goes through in the pocket of my shirt. The consequences of failure are much greater, also. As are the constraints. Our PCs can freeze when some programs decide to download updates, but our cars had better wait until they are parked.

The average driver doesn’t think about the computers under the hood but rather the computers in the dashboard. We get directions from them, we play music using them, we make calls with them, and, increasingly, we are hooking our phones up to them. That means we don’t want our car interfaces to get out of sync with our devices. And there might lie a problem.

We build the chips for our PCs to be highly reliable, but when is the last time you saw a consumer part at the far end of the bathtub curve? A 10-year-old PC is unusable due to lack of memory and processing power, even if the components are working perfectly. Component failures forcing upgrades would be a cause for celebration.

Cars used to have short lives. Part of this was reliability and part was styling. Detroit tried to change the appearance of cars every few years to encourage people to buy new ones, a process called planned obsolescence. A seven-year-old car from the 1960s or 1970s was showing its age. I know this. I owned a Ford Pinto.

Today cars last far longer. That is a problem for the electronics in the dashboard. Buy a new iPhone, try to interface it to your 10-year-old but still working great car, and Siri will laugh at you. If you see a car as a computer with tailfins, you will be seeing people using car computers far older and more antiquated than the ones on their desks or in their pockets.

Maybe, we need to bring planned obsolescence back for entertainment systems on cars, which means that they need to be made modular and replaceable. I can hear the car owner now. “Gee, my music system broke? Great! I have a reason to upgrade to play ZDs.”

The alternative? A car owner might have to buy a new car, otherwise he cannot access the hot new car software, CAR-DOS 6.8—also known as Tinted Windows. And, if Tinted Windows runs not only the entertainment system but the collision avoidance system, this might be a real problem.

Direct questions and comments about this department to Scott Davidson; davidson.scott687@gmail.com.

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