

### 6.3 AUTOSAR and ESXi

The AUTOSAR<sup>7</sup> partnership to which many OEMs and suppliers belong brought AUTOSAR to life in 2003 as a platform to unify the programming model and the runtime system for ECUs. It can be compared to the platform component in a PaaS stack. AUTOSAR is not a product, but a specification to which OEMs and their suppliers may or may not conform, which is one of the reasons AUTOSAR has not been fully and widely adopted. AUTOSAR has only recently added support for multicore CPUs and a TCP/IP stack. It does not provide isolation levels for communication between ECUs, nor does it support fault tolerance. In fact, code executing on the AUTOSAR runtime must implement fault tolerance itself. This is not only a major undertaking, but it is also error prone and would have to be adapted to each new processor architecture. Alternatively, the VMware ESXi hypervisor has supported multicore CPUs and fault tolerance through software lock stepping for many years, and the NSX networking components provide microsegmentation and security in the most demanding environments. Thus, VMware ESXi combined with software lockstepping and NSX is the ideal underpinning for the AUTOSAR runtime, adding easy portability, fault tolerance, isolation among virtual machines, and network security, without the need to change the application.

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<sup>7</sup> <http://www.autosar.org>