THE HANSEN REPORT ON AUTOMOTIVE ELECTRONICS

Editorial Notes

Dear Reader,

Carmakers the world over are convinced that software competency is an essential ingredient in creating competitive advantage and profits. They are now in the midst of revolutionary and expensive campaigns to develop software-oriented architectures. And, given software's centrality, carmakers have rightly been beefing up their software competencies. Many carmakers are taking software development in house. Carmakers need to own the application software that most differentiates their vehicles, especially in the cockpit HMI, ADAS/AD and powertrain domains. But many carmakers are also developing their own operating system/middleware layers, such as vw.os, Daimler's MB.OS, BMW.OS, VolvoCars.OS and Toyota Arene. In addition to software developed in house, the platforms will be built, more or less, using RTOS kernels and other software components from third-party suppliers.

Carmakers need a common software platform in order to access an ecosystem of software developers, from inside and outside the company, whose software products can work on the platform without much engineering effort to make them compatible. The more common the platform, the larger the ecosystem. Despite the cost that will be required to maintain and update their platforms for many years to come, some carmakers are likely thinking that they have enough volume to succeed with an ecosystem that is willing to conform to their platform interfaces.

To access a much larger ecosystem, and because the operating system/middleware layer is non-differentiating, a number of industry executives have been

calling for collaboration among carmakers to develop a standard software platform. But because carmakers need to start putting their software-defined vehicles on the road by 2024, there is probably not enough time to wait for standards. The Chinese auto industry is already collaborating. In June 2021, its Autosemo collaboration published SOA Software Architecture Technical Specifications 1.0.

Eventually some carmakers will choose to share platforms with each other or alternatively source entire platforms from third parties such as Apple or Alphabet. The Android Automotive platform is already embedded in IVI systems from multiple carmakers. Carmakers will soon have some big decision to make that will greatly impact their suppliers.

Cordially,

Paul Hansen
Editor

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