

V2X Software Stack and Software Development Kit (SDK)

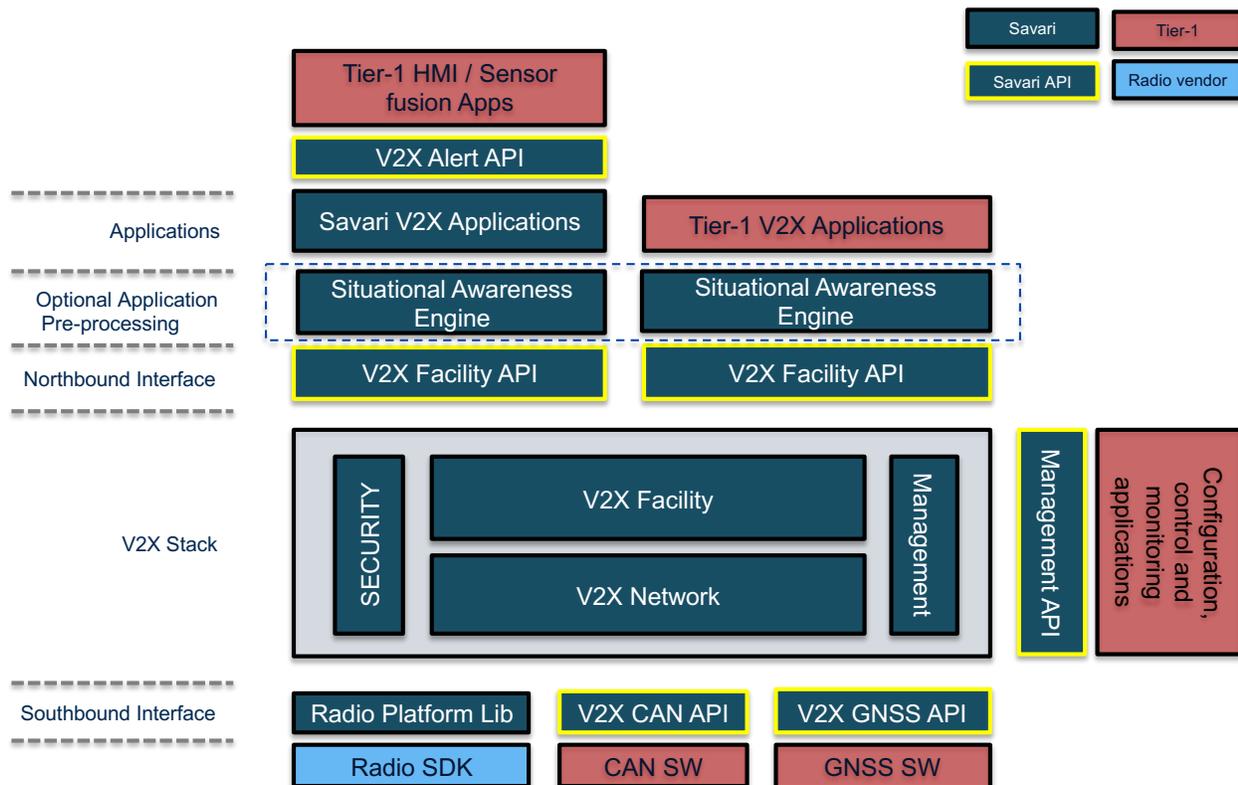


Overview

Savari produces the industry leading **Cellular and DSRC based V2X Software and applications** that are used by Tier-1s and OEMs. Savari's industry leading after-market products, the **MobiWAVE™ (OBU)** and **StreetWAVE™ (RSU)** both use the Savari V2X software. Our offerings range from EU, US and China compliant specifications to safety and mobility applications that have been trialed and deployed by numerous US-DOT pilot, 5GAA and automotive Tier-1s.

V2X Software Stack

Savari's V2X Software stack is both radio technology and radio vendor agnostic. It **supports both DSRC and C-V2X** and is integrated with the major chipset providers (Qualcomm Technologies, NXP & Autotalks). In addition, Savari's V2X stack is POSIX compliant and available on major operating systems (OS): namely Linux and QNX.



The Savari software solution has been architected to be modular and platform independent. It provides APIs for platform abstraction and offers easy integration for position and timing interfaces. The modules (e.g., the applications and the V2X stack) can be run on different domains, independent cores of a processor or across different processors.

The base V2X Stack layer offers standards compliant network layer, facility layer and message security. A management API provides capability to configure, extract logs and other debug information, lifecycle management of applications, processes and services. The security block provides message signing, verification, certificate management and other

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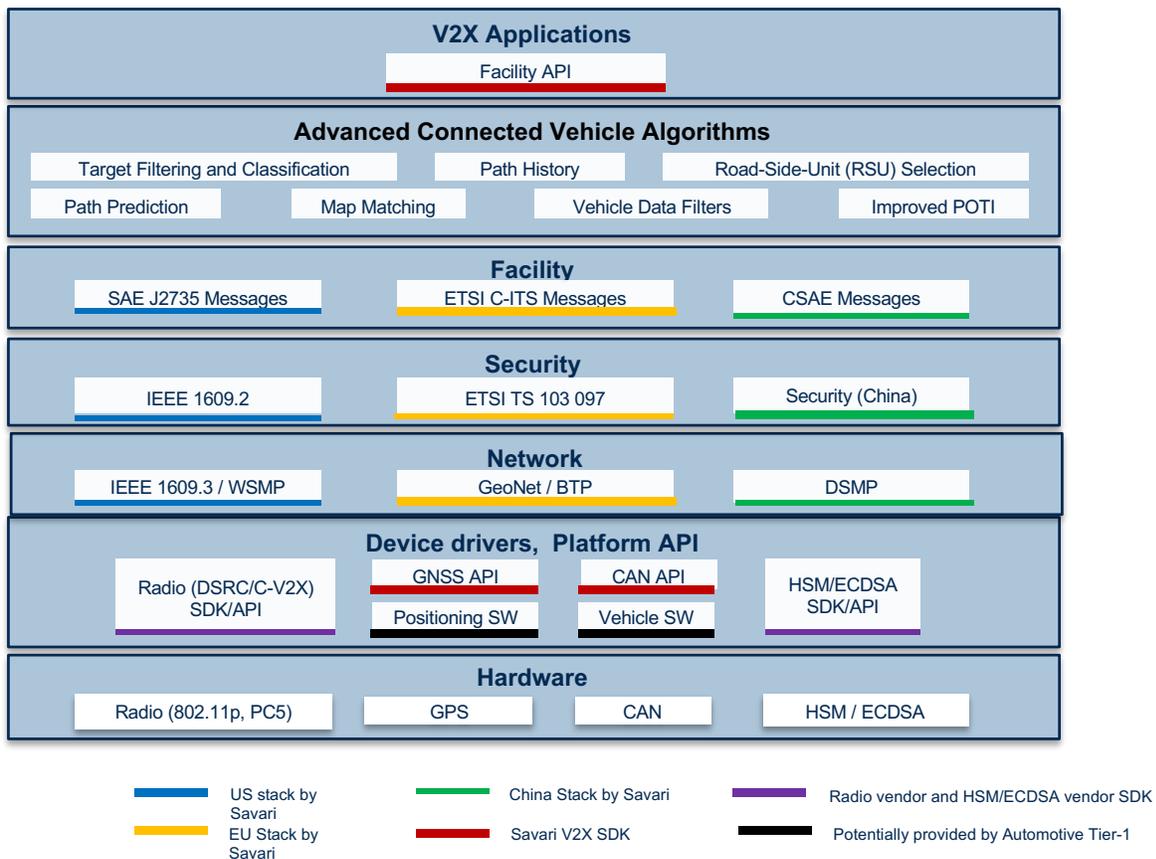


security checks. Savari software solution has been pre-integrated with prominent V2X security hardware offerings (both signing and verification using hardware accelerators) from NXP, Infineon and Autotalks.

The optional Situation Awareness Engine module provides pre-processing for target vehicle tracking, target filtering and classification, map matching, vehicle data filters, etc. This engine facilitates significant savings on application processing/DMIPS requirements and is powered by Savari's patented IP and decade long experience in the V2X domain.

The overall software stack supports US (WAVE), EU (ETSI) and China (C-SAE) specifications with the specific region configured at startup. This capability allows a single integration and test cycle for production across various regions.

Savari's V2X software solutions are compliant with applicable standards of IEEE 1609.x, SAE J2735, ETSI ITS and C-SAE china.



The Savari C-V2X solution is the first to be certified by the China Academy of information and Communication Technology (CAICT).

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Cellular/DSRC V2X Software Development Kit (SDK)

Savari's V2X software development kit (SDK) provides feature-rich libraries for developing both C-V2X and DSRC V2V and V2I applications. The SDK is supported for both the Qualcomm 9150 C-V2X chipset solution as well as the widely deployed Savari MobiWAVE™ On-Board-Unit (OBU). Application developers can use the facility APIs provided above the base V2X stack layer to access decoded V2X messages and other information such as position, timing and vehicle data. A sample program is also provided that should further accelerate application development. Furthermore, custom applications can be run in conjunction with SAE J2945/1 compliant BSM service that can be provided as part of the overall package.

A feature-rich IDE on an X86 platform (available soon) provides users a way to simulate custom applications before executing them on the target hardware. The Savari SDK is available for US (WAVE), EU (ETSI) and China (C-SAE) regions.

The SDK offers:

- Ability to develop custom V2X Applications for the Savari MobiWAVE
- Complete tool chain, necessary to create custom Linux configuration for the Savari MobiWAVE family of products
- Source code for an example application
- Documentation including user and installation guides.