Link V2X is a software-defined V2X communication layer for connected traffic services across vehicles, infrastructure, applications and backend systems.

Reusable Java and .NET components handle message creation, exchange and interpretation, communication interfaces and message security. This gives development teams a ready-made foundation for V2X communication without rebuilding the underlying communication stack for every application.

Link V2X can be integrated as a standalone product with existing systems or used as part of Digitraffic's Traffic Intelligence Platform.

V2X communication spans multiple standards, interfaces and channels
Traffic information may originate in one system while the service that needs it operates somewhere else. Vehicles, roadside installations, traffic systems and service providers may use different communication technologies, standards and interfaces.

For information to move reliably between them, messages need to be created in the right format, transported over an appropriate channel, received correctly and interpreted by the destination system. Building and maintaining that communication layer separately for each application increases development work and makes interoperability harder as standards, interfaces and ecosystem requirements evolve.

A common foundation across V2X technologies
Link V2X provides a common software foundation for creating, sending, receiving and interpreting standards-based V2X messages across different communication paths. It supports ITS-G5 facilities and transport layers, application-layer access for 5G V2X direct communication via PC5 and network communication via Uu, as well as a hybrid broker-based V2N2X option.

Broker integrations include SI and BI interfaces used in connected traffic ecosystems. This allows development teams to select communication paths according to the deployment, infrastructure and receiving systems.

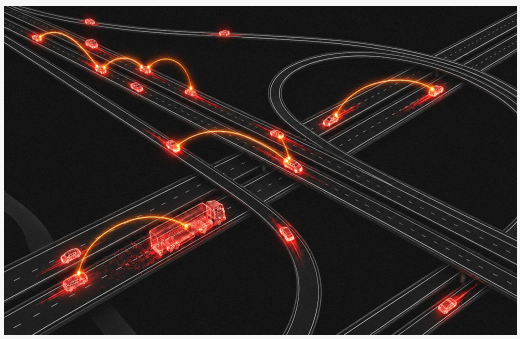
Turn traffic information into messages applications can use
Different traffic situations require different message types. Link V2X gives developers the components needed to create, encode, exchange and interpret standards-based V2X messages.

Supported ETSI message families include CAM for cooperative awareness, DENM for environmental notifications and hazards, VRU messages for vulnerable road users, IVIM for infrastructure information, SPATEM and MAPEM for signal phase and map information, and SREM and SSEM for signal requests and responses.

Depending on the service, these messages can communicate vehicle awareness, hazards, road and infrastructure information or coordination requests between connected participants.

A modular architecture for V2X development
Link V2X separates communication, message handling, transport and security into reusable software components that can be integrated according to the application and deployment.

Development teams can use the parts of the V2X stack their application requires while keeping communication and security capabilities separated from the application logic they are building. Link V2X is available for Java and .NET, with support for established V2X message standards, communication technologies, broker integrations and security mechanisms.



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Verify origin. Protect integrity.
Exchanging a message is not enough. Receiving applications also need a way to assess where information comes from and whether it has been altered.

Link V2X supports ETSI TS 103 097 security envelopes together with C-ITS security and certificate policies. Signing and verification allow receiving applications to assess message origin and integrity before the information is used.

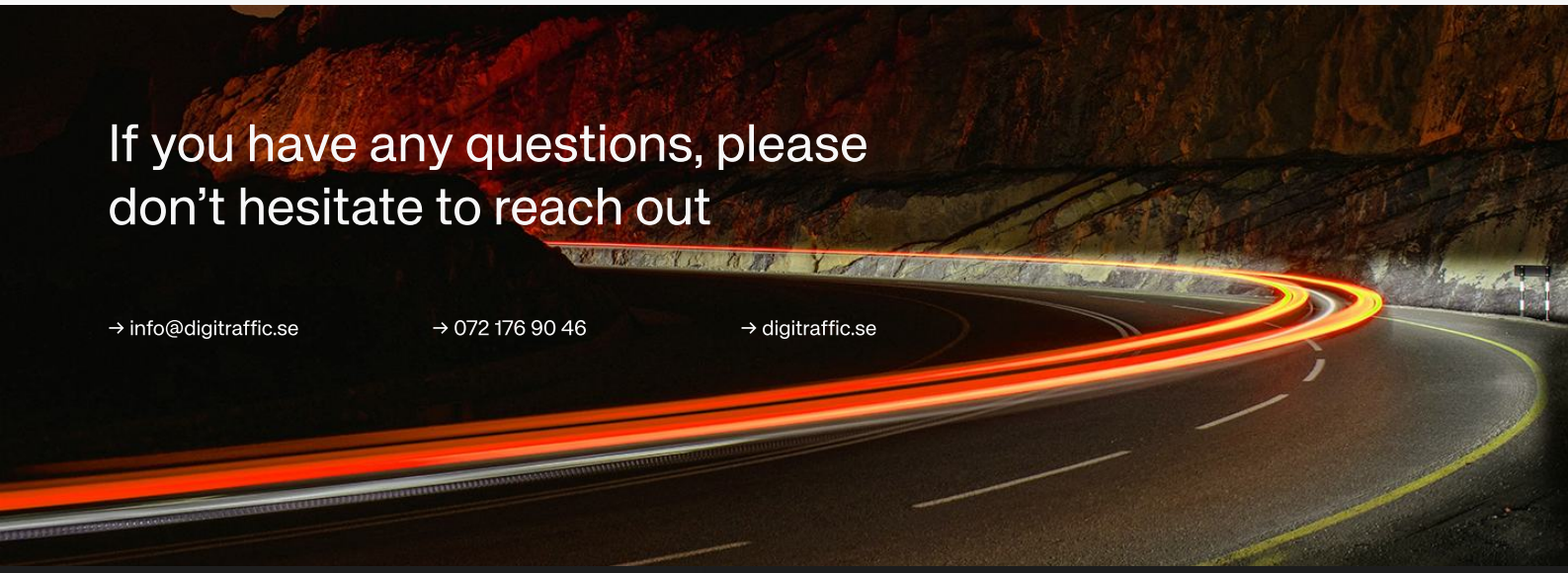
Security capabilities depend on the selected runtime and deployment. Java supports PKCS#11 hardware-security integration, while hardware-security-module support is currently not implemented for .NET.

Run Link V2X at the edge, in the backend or across both
Link V2X can be embedded in an edge application, integrated with a backend service or deployed across both environments.

This gives development teams flexibility to place V2X communication where it fits the architecture and use case. Link V2X also supports offline licence management and gives customers control over their integrations.

How Link V2X fits into Digitraffic's Traffic Intelligence Platform
Within Digitraffic's Traffic Intelligence Platform, Link V2X primarily supports Connect and Communicate by enabling standards-based information exchange between applications, infrastructure and services. Message signing, verification and security also contribute to Trust.

Link V2X can operate independently with existing customer systems or work together with Perception Engine, Lanes and Monitor as part of a broader deployment.-



If you have any questions, please don't hesitate to reach out

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