FPT

20 YEARS OF INNOVATION

AUTOMOTIVE

SERVICES

Your Trusted SDV Partner

20 Years of deep expetise in automotive software engineering

17 Years in AUTOSAR

4,200+ Automotive software engineers

150+ Leading OEMs, Tier 1 and Chip Makers are our clients

50 Milion+ Cars on the road

Global Recognition

The first company in Southeast Asia to achieve ISO/SAE 21434

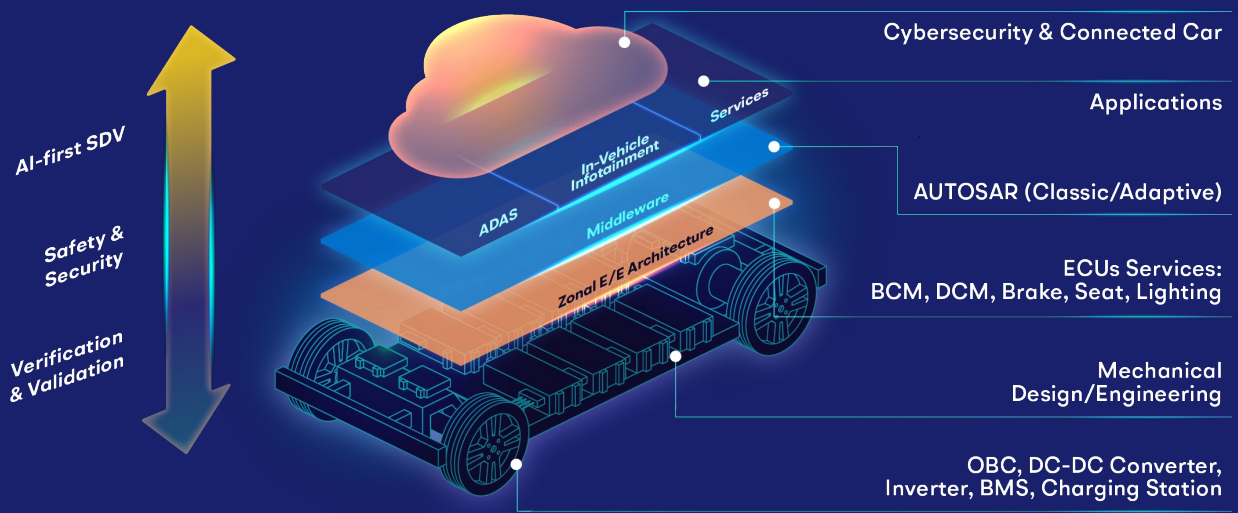
AUTOSAR · AUTOMOTIVE SPICE® · ISO 26262 · ISO 21434 · TISAX® · AFSP by SGS-TÜV Saar · PMI Project Management Institute · ISTQB Certified Tester · TMMi CERTIFIED LEVEL 5 · PSM · CMMI DEV/5

Partners

NVIDIA · Mila · LANDING AI · AITOMATIC · Microsoft · aws · Google Cloud · squirro · databricks · data iku · CYMOTIVE TECHNOLOGIES · audiokinetic · Palantir · SCSK · P3

OUR CORE COMPETENCIES

SMART FACTORY | TESTING | AI | ASPICE | AUTOSAR | DIGITAL COCKPIT | EV



Our Focus Areas

Digital Cockpit and Connected Car

Engineering next-gen experiences and seamless connectivity through our advanced expertise in CDC, telematics and V2X technologies

SDV / ECU Platform

Enabling SDVs with our advanced platform engineering, cloud services and digital solutions

ADAS/AD & Integrated Safety

Accelerating ADAS and Autonomous system development through a unique combination of our system expertise, end-to- end services and turnkey solutions

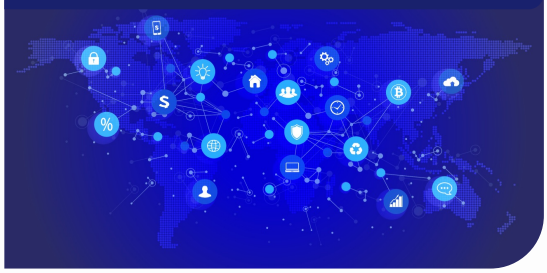
Electrification

Enabling faster transition to E-mobility with our expertise covering Onboard chargers, Converters, Inverters, BMS, Charging station

Automotive Cyber Security

Enabling security on wheels with our next-gen services - from consulting and advanced TARA to pen testing and VSoC, covering ECU, vehicle network, cloud and backend layers

Connected Digital Enterprises



Reimagining the enterprise IT landscape - systems, infrastructure and applications- that seamlessly integrate with vehicles

AI-Edge Solutions

The AI-first SDV demo objective is to demonstrate cutting edge automotive concept in a hands-on and interactive manner.

AI Personal Assistant

Generative AI-based Agent for smart cabin commands
(BCM, Lighting, interior cabin sensing, IVI)

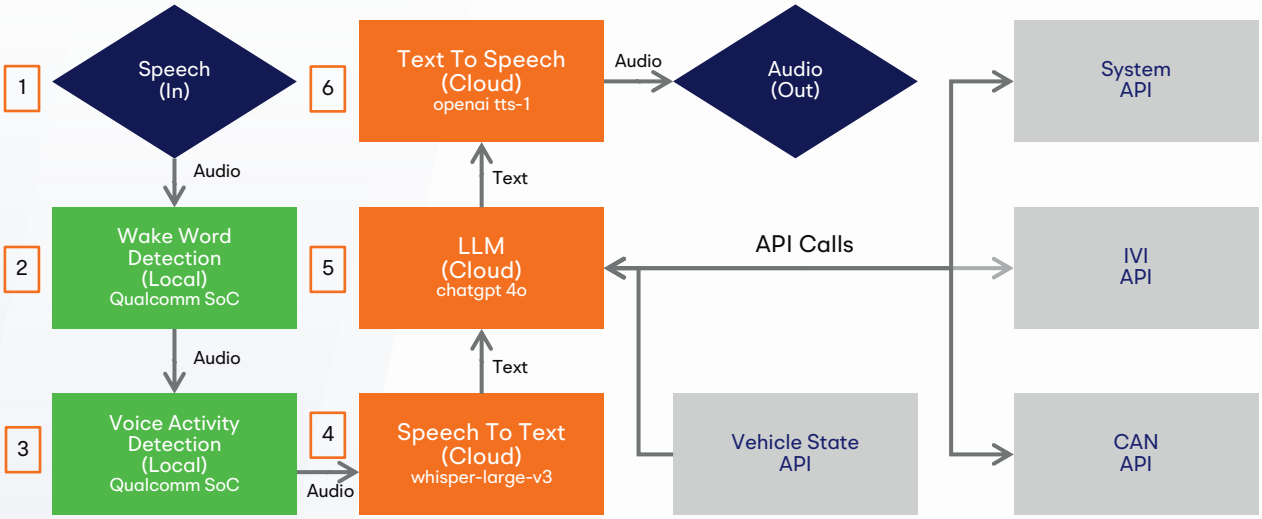
2024 FPT Techday

2025 Automotive World Tokyo

Demo Features: smart cabin command – voice reasoning (BCM, Cabin sensing, IVI), AI on edge, natural language processing (NLP) leverages large language models (LLM).

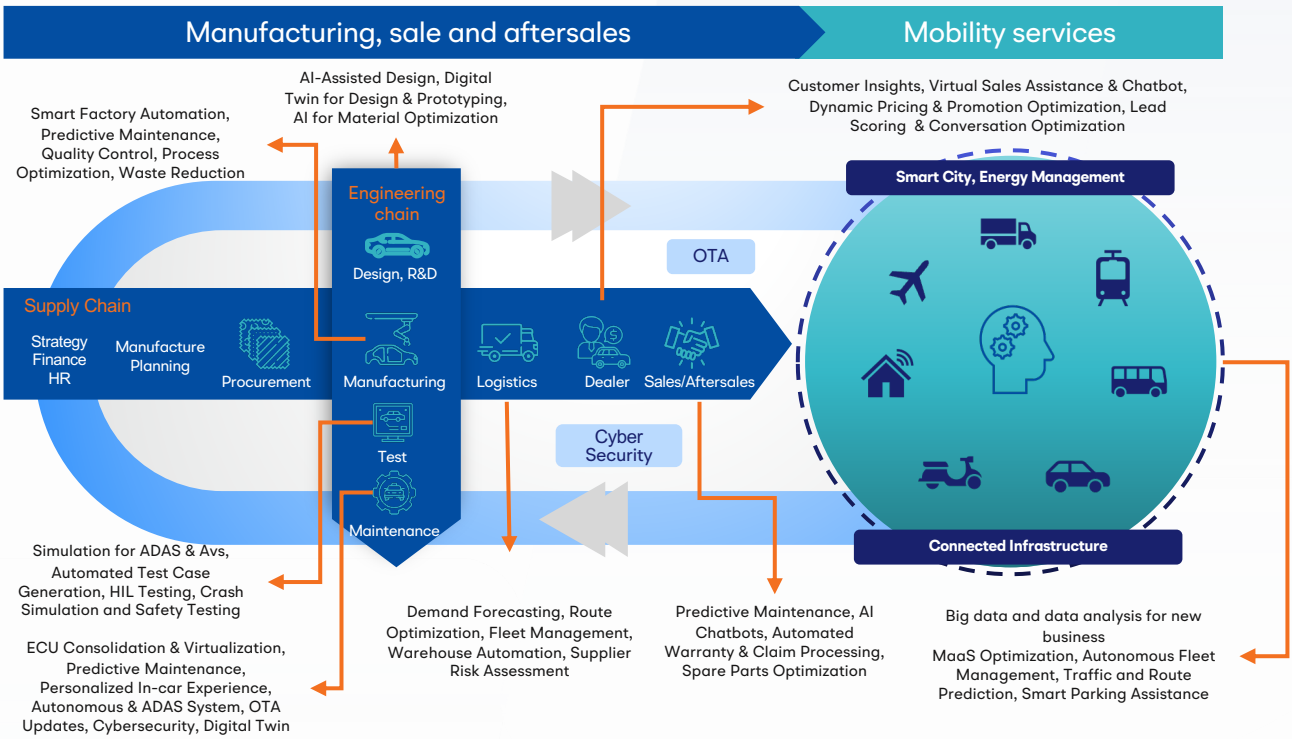
System Architecture

1 → 6 Response time 1 to 3 seconds depending on the question

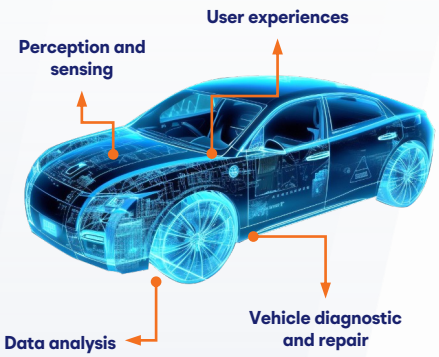


AI-First SDV

FPT integrates AI deeply into the SDV journey – transforming manufacturing, enhancing sales, optimizing aftersales, and streamlining IT services. By embedding intelligence in every phrase of the vehicle lifecycle, FPT accelerates innovation, ensures adaptability and empowers OEMs, Tier-1s and chipmakers to deliver smarter and more personalized mobility experiences.



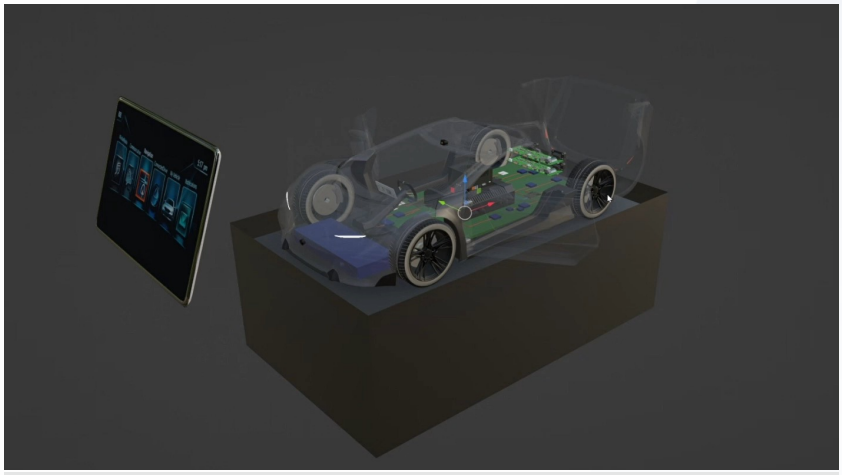
ML and AI for Engineering Chain



Perception and Sensing	User experiences	Vehicle Diagnostic and Repair	Data Analysis
3	2	1	5
Autonomous Driving Platform	Edge + Cloud AI Voice Assistant	AI diagnostic/ SOVD Cloud BMS	**Personalized AI Agent on Vehicle**
			PoC / Demo

AI-First SDV

Body Control Unit



Next Gen Zonal Architecture SDV

A SDV Concept Car showcases FPT's expertise in AUTOSAR while aligning with the industry's shift towards Zonal E/E Architecture.

KEY FEATURES

1. **Zonal E/E Architecture for Electric Vehicles:** Optimized ECU communication through centralized computing, enabling efficient power distribution and intelligent energy management.
2. **AUTOSAR-Compliant Software Stack:** Ensuring modularity, interoperability, and scalability for future software-defined vehicles.
3. **Seamless ECU & Middleware Integration:** Supporting real-time data exchange and over-the-air updates.
4. **AI-Enabled Features:** Integrating AI-driven capabilities for predictive maintenance, virtual assistant

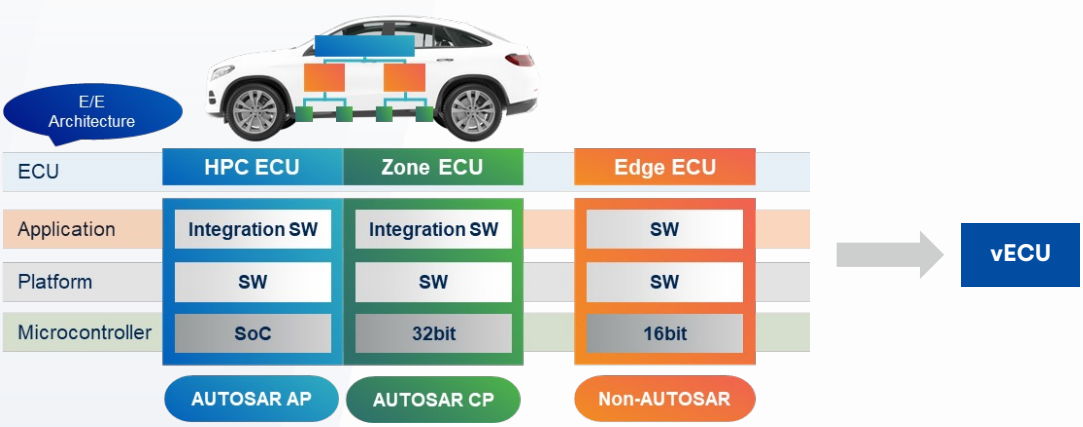
Size: 100 x 52 x 26 cm

Virtual ECU (vECU)

Level	Apps	Middleware	OS	Driver
LO Algorithm Model	Model /Handwritten	-	-	-
L1 Application Level	Prod	Sim	-	-
L2 - Simulation Middleware	Prod	Prod	Sim	Sim
L3 - Production Middleware	Prod	Prod	Prod	Sim
L4 Full Binary	Bin	Bin	Bin	Bin

Production Simulated

By providing solutions for Level 3, production software testing capability for applications and middleware can be achieved with x86 PC base simulated software about OS (Operating System) and MCAL (MCU Abstract Layer) which is MCU vendor independent.



AI-First SDV

Service-Oriented Vehicle Diagnostics

SOVD is being currently standardized by ASAM as an interface (API) for diagnosing and communicating with software-based vehicles. It is a flexible standard that provides a uniform access to the diagnostic content of HPCs and their related applications, as well as classical ECUs.

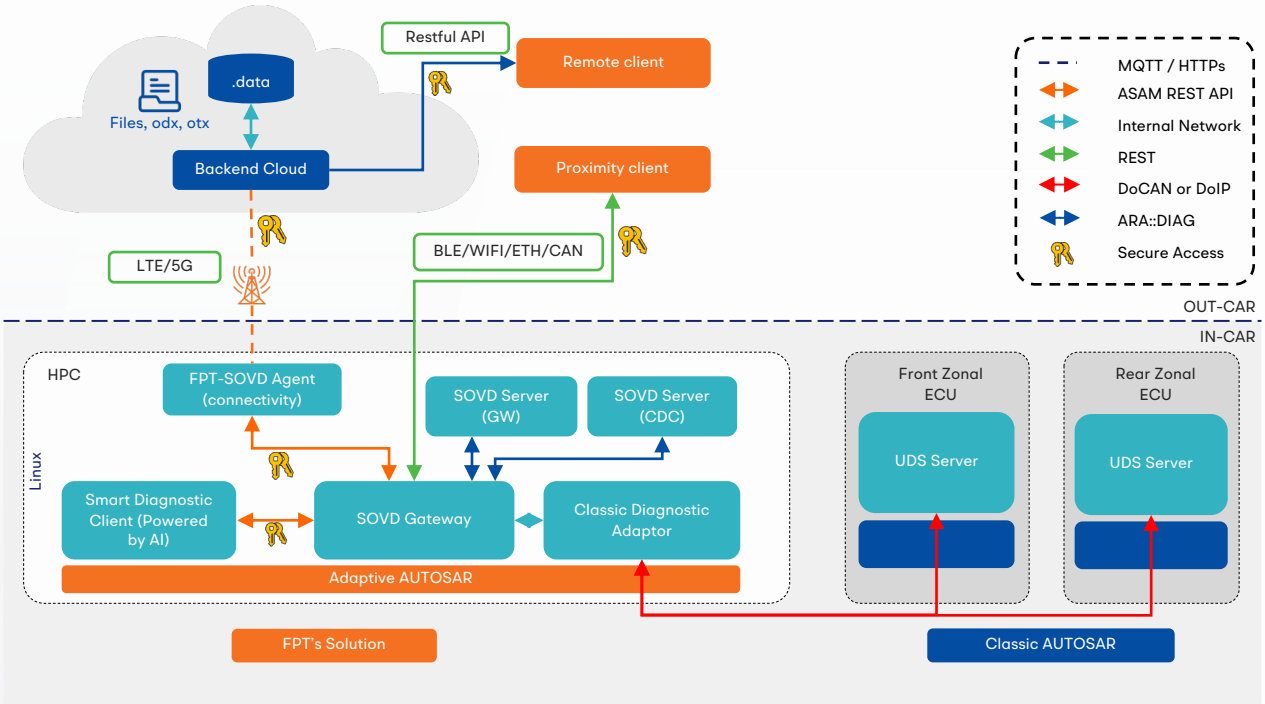
Dynamic ECU Integration
Facilitates centralized management for zonal E/E architectures, enabling scalable software diagnostics.

Runtime Adjustments
Supports selective application updates and energy-efficient runtime diagnostics.

Robust Security
Offers multi-layered encryption and AI-powered anomaly detection to safeguard vehicle systems.

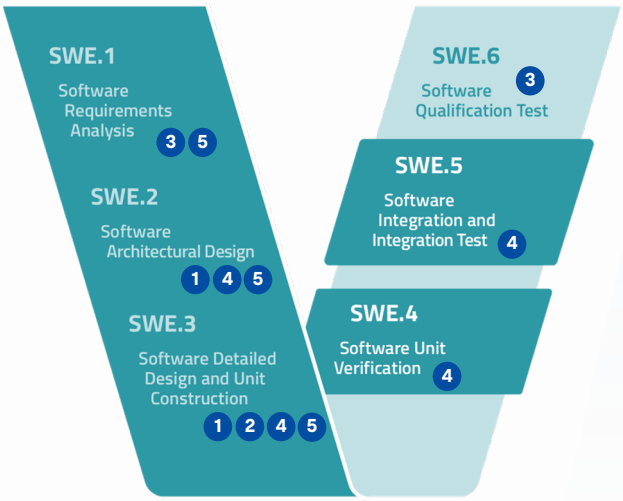
Remote Diagnostics
Enables manufacturers to perform detailed diagnostics and predictive maintenance from the cloud, reducing repair times.

SOVD Solution - Architecture



AI-First SDV

SDVx – AI-Powered SDV



1 Code → Diagrams
- Generate Diagrams of Low-Level Designs (SUDs) from code
- Generate Diagrams of High-Level Designs (SADs) from code

2 Code Review
- Syntax checks, coding standard and run-time error validation
- MISRA C/C++, Cert C/C++ and Java compliance validation
- Suggestion for code improvement

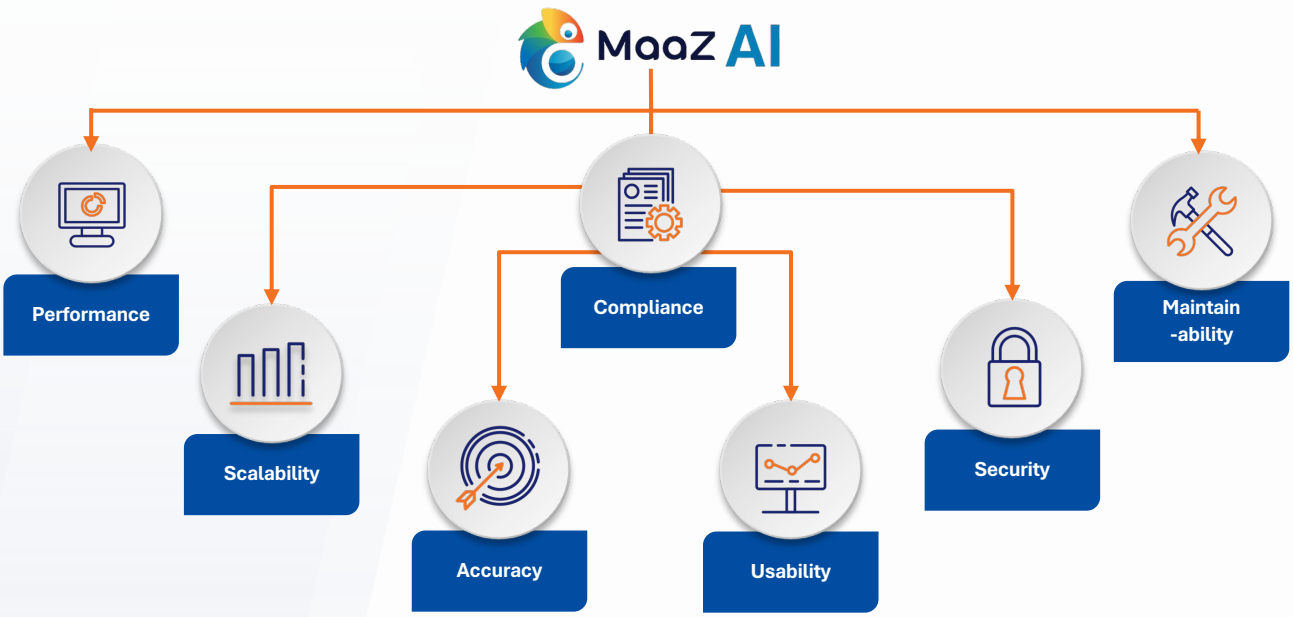
3 Requirement → Test Cases / Test Script Generation (HIL)
- AI-generated test cases from requirements
- AI-generated test script from test cases

4 Design → Code
- AI-generated code which is compliant with Automotive standards from SUDs/SADs

5 Requirement → Code → Design
- AI-assisted analysis of software requirements
- AI-generated functional code directly from requirements
- AI-generated Diagrams of HLD/LLD from code

MaaZ AI Product Roadmap	1 MaaZ AI SDVx – Code2X	3 MaaZ AI SDVx – Req2X	2 MaaZ AI SDVx – CodeGuard	4 MaaZ AI SDVx – Design2X	5 MaaZ AI SDVx – Req2X
	Jul 2025	Dec 2025	Jun 2026	Mar 2026	Sep 2026

SDVx – Non-functional Requirements



Req2X Functional Requirements

Current Features

Soon-to-have Features

Features

Production Phase 1 (MCAL Layer – CanDry, MCU Module)	Production Phase 2 (BSW Layer – CAN Stack)
Generate test cases	Generate test cases
Generate test scripts	Generate test scripts
Arxml Generation to add config to test scripts	Arxml Generation to add config to test scripts
Traceability for test cases	Traceability for test cases
Traceability for test scripts	Traceability for test scripts
Self-healing test cases	Self-healing test cases
Self-healing test scripts	Self-healing test scripts
Download generated test cases, test scripts from UI	Download generated test cases, test scripts from UI

Code2x Features

Features

- Generate SUD/SAD from Code
- Generate Activity Diagrams
- Generate Sequence Diagrams
- Generate Data Flow Diagrams
- Generate State Machine Diagrams
- Multi-Programming-Language Support (embedded C, C++)
- Multi-format exports (.EA, .xlsx, .docx, .JPEG, .PNG, .SVG)
- CLI integration
- Live Code-change Update and code2X chatbot
- User CMS for diagrams' management

Current Features

Coming-soon Features

Roadmap

01 Alpha Release, including basic features

03 Beta Release, including design coverage from App to App, App to Platform

05 Integrate Code2X into SDVX ecosystem UI

07 Receive feedback and continue improvement

2025 — June — July — August — September — October — November — December — 2026

02 Support C++ programming

04 Implement review design checklist and review feedback

06 Implement .EA (.xml) export and integration to other tools such as Enterprise Architect.

CodeGuard Features

Features

- Logic Checklist Compliance Review
- MISRA C/C++ 2025 Standards Compliance Analysis
- Custom Rule Compliance Analysis
- Rule Management
- Diff View between refactored and old codes
- CERT C/C ++ 2016 Standards Compliance Analysis
- GitLab MR Integration
- CLI integration
- Reviewer Role
- Support Other Programming Languages

HackAIthon Features

Soon-to-have Features

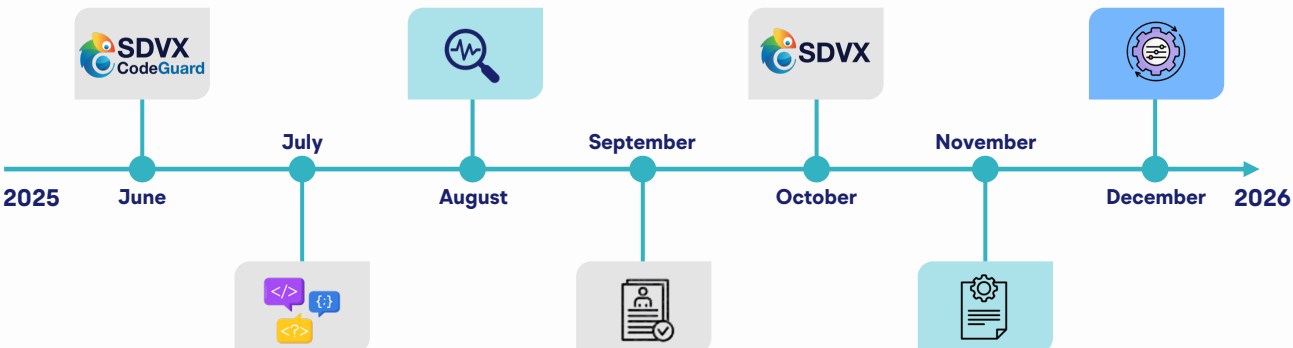
Roadmap

01 Alpha Release, including developer self-review with MISRA/CERT C static check.

03 Implement Reviewer Role with line-by-line diff view for accept/reject AI code fix

05 Integrate Code2X into SDVX ecosystem UI

07 Receive feedback and continue improvement



02 Support review of other programming languages according to their respective rules

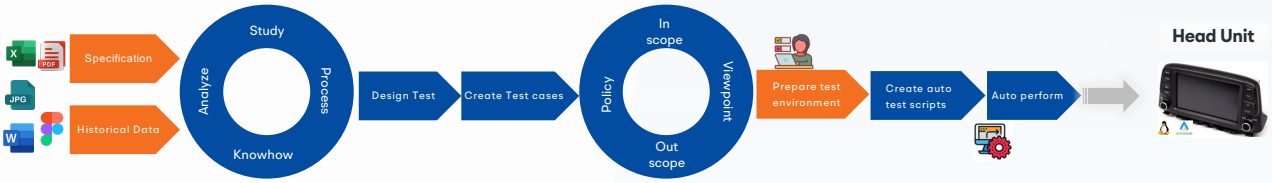
04 Implement full context repository review per Merge Request

06 Implement CLI

AI Test Autonomy

AI-powered test generation accelerates validation for complex HMI and automation systems. With FACE platform's dynamic interface, manual testing is time-consuming and prone to gaps. AI ensures broader coverage, adaptive learning and faster iteration – driving higher quality, reduced costs and readiness for the next-gen digital cockpit.

Manual



AI - Auto

AI generate test case can reduce ~30% effort create. **Full Automation test can handle up to 80% test cases**

Core Components

Piece	Responsibilities	Tech
Root agent ("Anthony")	• Plan, recall, judge, learn • Parse natural-language test case • Keep and evolve the Screen Spec memory • Decide which screen we're on • Decide which button to press next • Verify the locator's dot is correct • Ask tester only when both LLMs fail	Cloud GPT-40 or local 7-13 8 model
Locator agent	Given "Find <label> on this screenshot return coordinates. No judgement, no memory.	ShowUI-2B/SeeClick/custom
Screen Spec store	• List of known screens • Buttons per screen with canonical label + saved template/coords • Graph of navigation edges	sqlite/JSON+ vector store for embeddings.
Tap/swipe executor	Converts normalised (x.y) or verb into ADB/HID/CAN command	Local Rust

Device Farm Testing

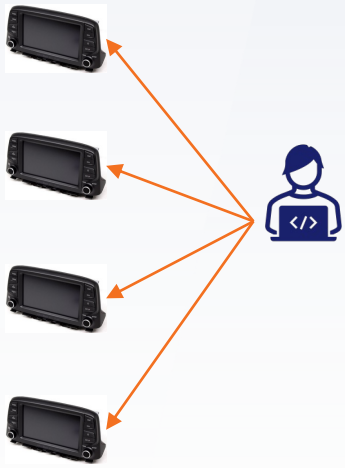
Remote test is the common solution for Automotive head units to enable faster validation, reduced hardware dependency, 24/7 execution, global team collaboration with lower cost.

Pain Points

70%
of project members don't have dedicated HU

250%
higher costs incurred when testing in multiple countries

30%
of features cannot be verified in Vietnam

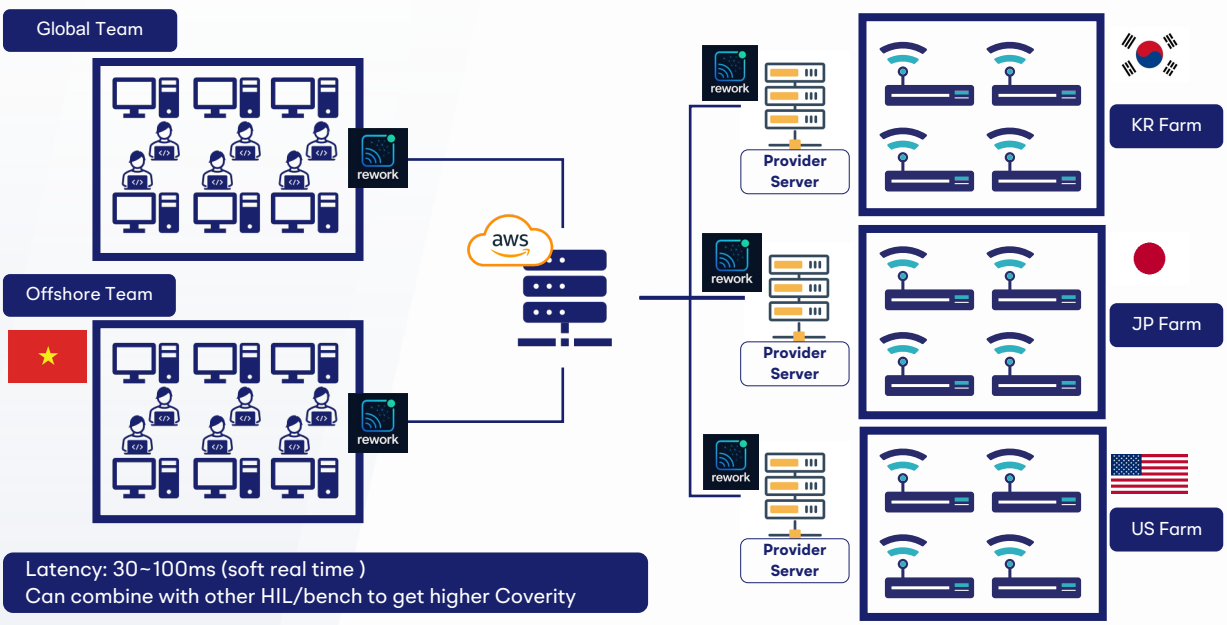


Our Solutions

Testing team can perform test with device that located to Test Farm around the world although they stay in Vietnam

"Rework" tool will record scripts then re-perform to handle regression test automatically

Customer can locate their device to the nearest Test Farm to maximize the cost and



Smart Key

The PoC Key is a smart key system that enhances vehicle security and user convenience. It allows users to lock, unlock, and start their vehicle without the need to insert a physical key. The system establishes a secure wireless connection between the key and the vehicle.

Key Features

- Keyless Car Entry
- Keyless Car Ignition
- Enhanced Security
- Battery-Powered
- Real-time Car Status
- OTA Updates

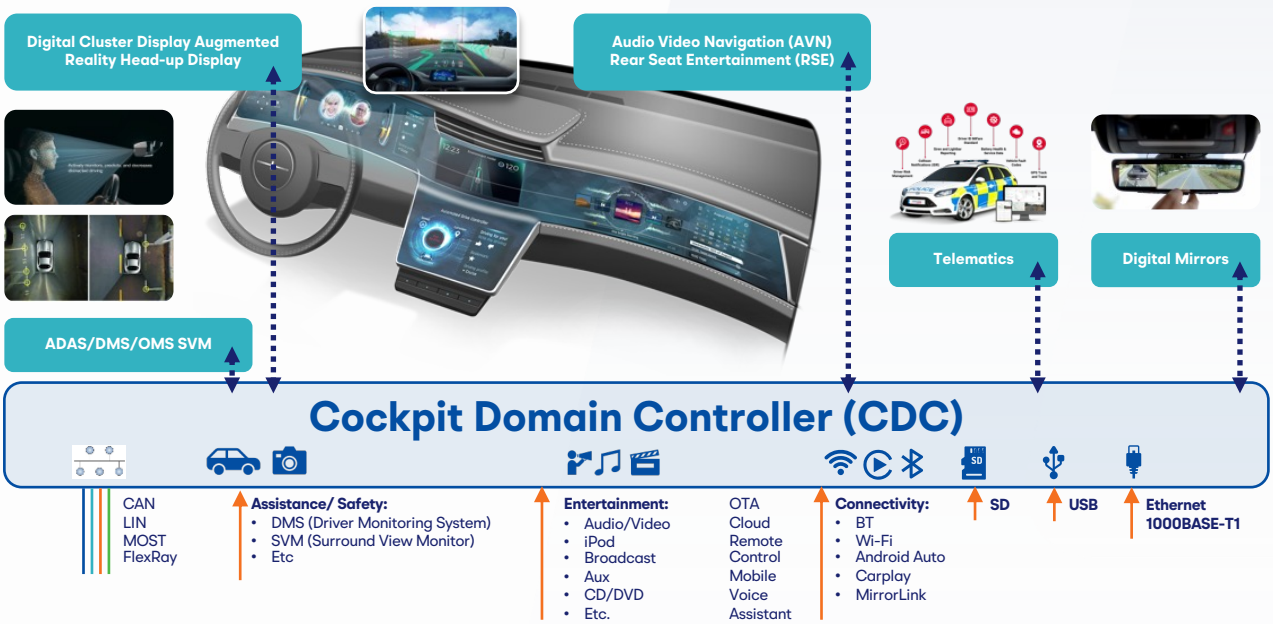
Remote Engine Ignition Icon

Unlock Car Doors Icon

MQTT

Next-gen Digital Cockpit

Much experience in cockpit domain controller: In-vehicle infotainment, Rear Seat Feature, Digital Cluster, Head-Up Display, Smart Mirror, Control Display, Surround View Monitor, Driver Monitoring System.



FACE – FPT Automotive Cockpit Electronics Platform

Platform / Framework

- IVI Platform
- Cluster Platform for Car
- Cluster Platform for 2-wheeler
- AR HUD Framework
- CDC Platform – Hypervisor-less
- CDC Platform – Hypervisor-based
- HMI Framework

Solution/Tool

- akaUT
- CabinX

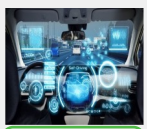
Hardware

Qualcomm
- ✓ SA8295P
- ✓ .....

TelechIps
- ✓ Dolphin+
- ✓ Dolphin3
- ✓ Dolphin5

NXP
- ✓ iMX8

AI/ML and Vision-based

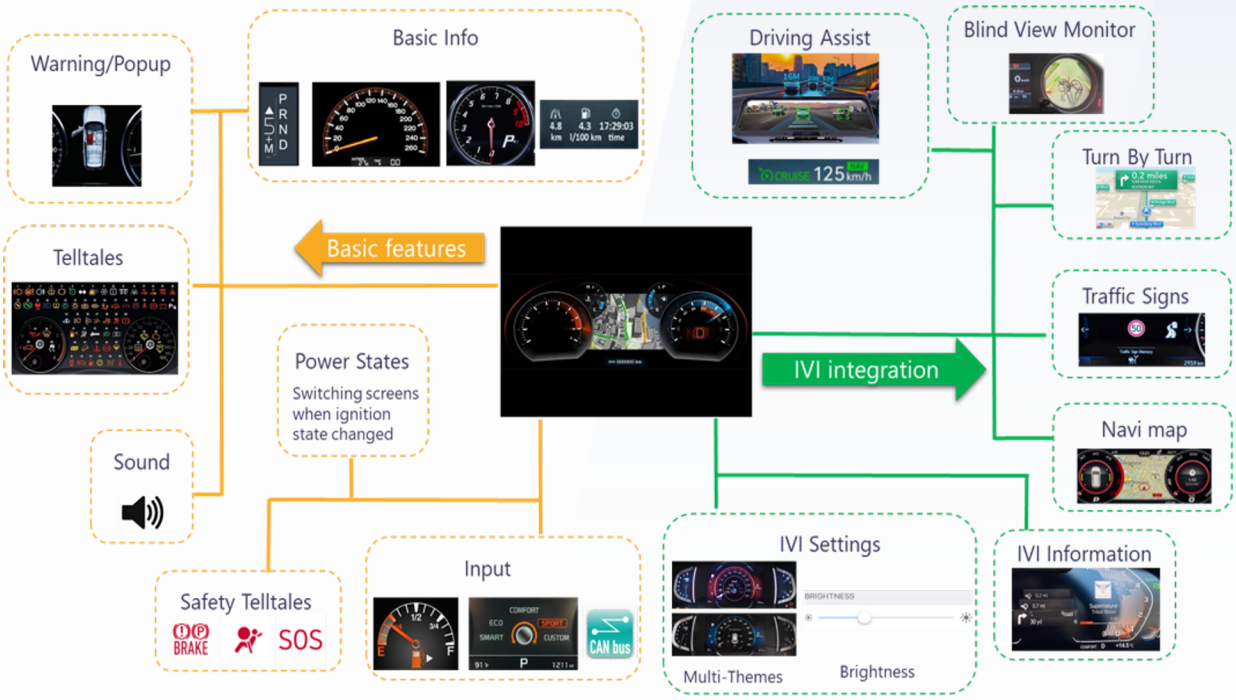

AI Voice Assistant


Driver Monitoring System


Surround View Monitoring

Next-gen Digital Cockpit

Cluster Features



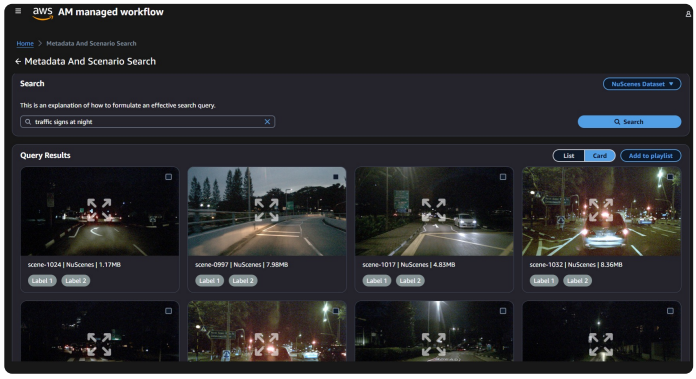
In-Vehicle Infotainment Features

AWS for Automotive

AWS for Automotive is the new initiative that brings together new and existing in-vehicle, cloud, and cloud-to-vehicle services and solutions from AWS and its partners. AWS solutions and services are used by thousands of automotive manufacturers, mobility providers, suppliers, technology companies, and retailers globally.

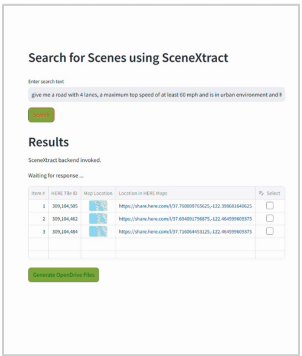
This new AWS for Automotive initiative simplifies cloud-based service and solution discovery in a single online resource making it easier to understand and deploy the best resource for a particular challenge. This allows customers to innovate faster with less investment risk.

Use Case #1 – AD/ADAS Simulation

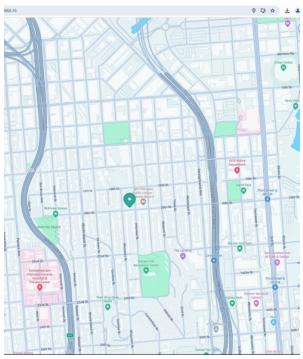


In this use case, we will introduce a next-generation ADAS software development flow that utilizes the advantages of generative AI and the cloud. For specific labeling and scene search, we use AI models to build a vector database based on video data collected from car cameras, etc. The new method uses generative AI to interpret natural language input and search for scenes, then reduces the time required for scene labeling, data preprocessing, and scene search, saving data scientists time.

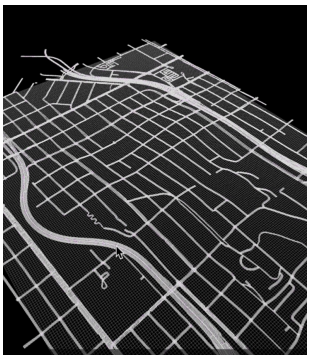
SceneXtract by HERE Technologies and AWS



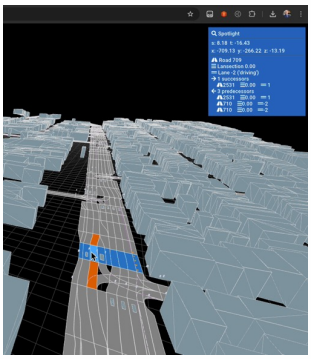
GenAI is searching for specific map locations, conditions, etc. that you want to apply to the simulation.



HERE HD map will extract locations matching the specified locations and conditions.



AnteMotion's solutions convert into 3D data for the common OpenDrive format.



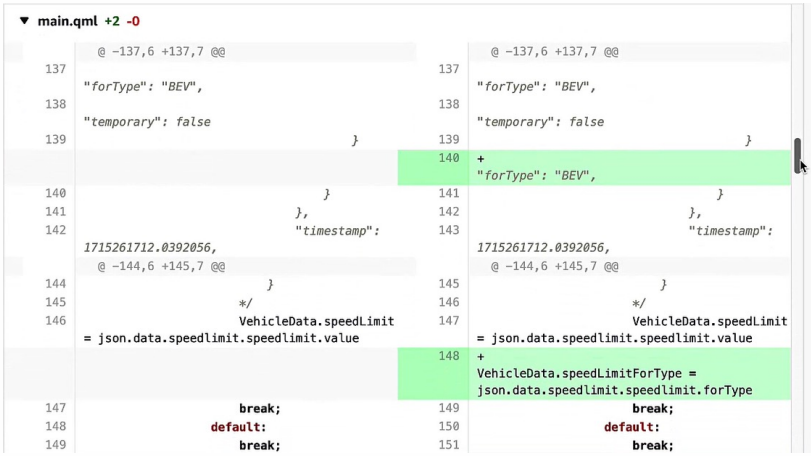
3D data of buildings, roads and other structures are added and used as simulation data for AD/ADAS.

AWS for Automotive

Use Case #2 – Efficient SDV development through AWS cloud vECU environment

The demonstration shows how automotive software can be efficiently developed by using AWS cloud virtual ECU environment. Developpes are able to access unified development environment on AWS cloud from multiple and global development sites to collaborate develop large and complex automotive software by using various tools, targets, and services hosted on AWS cloud.

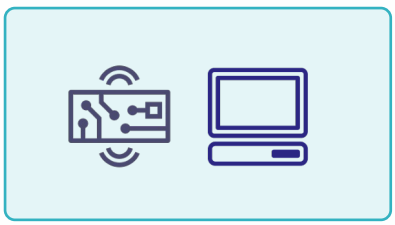
Automatic software program updates with generative AI



Generate AI prompt

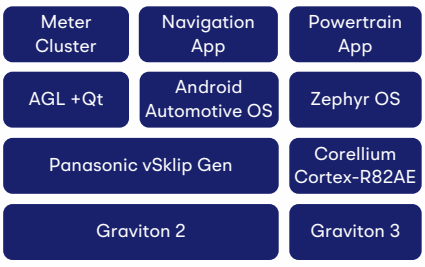
The speed limit data JSON object contains data of type for Type and is sent via WebSocket. The speed limit indicator is defined in the Screen().json file. For BEV vehicles, modify the program to change the speed limit value from 50 to 80.

Virtual ECU verification without physical equipment

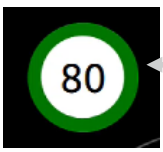


Software development machine

Automatic deployment & validation



vECU



Program updated

Panel meter display

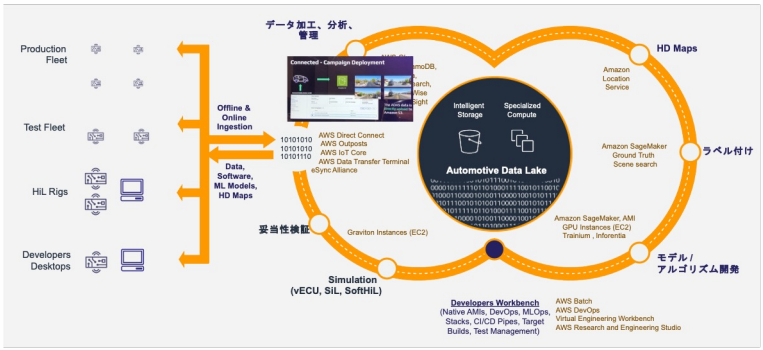
AWS for Automotive

Use Case #3 – Connected data platform for ADAS

Using real-time data collected from millions of vehicles, AWS IoT Fleetwise instantly detects dangerous incidents and vehicle malfunctions around the world. By analyzing this data in conjunction with video data from in-vehicle cameras, potential use cases include efficiently verifying the operation of safety functions and identifying the causes of malfunctions. This demo uses emergency braking control as an example to demonstrate the entire process, from collecting vehicle data using AWS IoT Fleetwise to providing feedback for ADAS development.

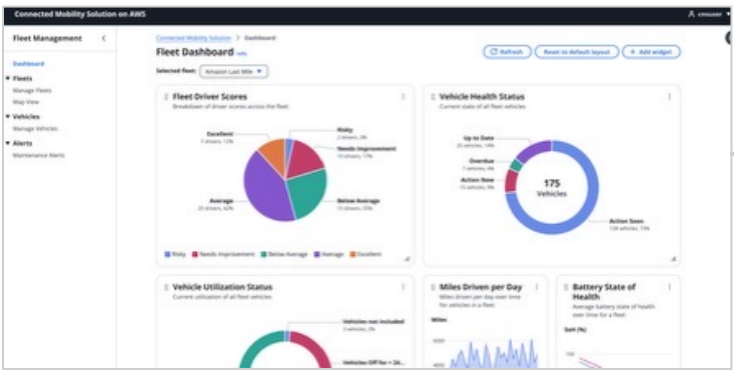
Endless automatic development

It is important to keep the cycle going quickly to keep up with the ever-changing road conditions. To achieve this, it is effective to collect data cost-effectively from vehicles on the market.

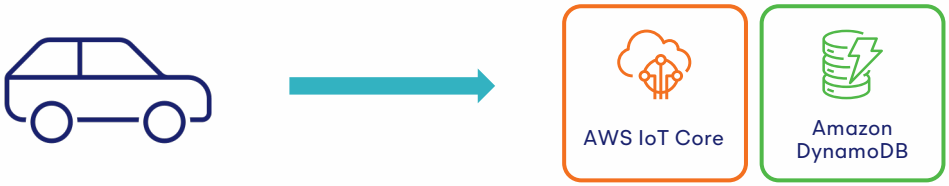


Specific implementation method

At our booth, we will provide an in-depth explanation through a demo of a connected system that uses AWS, including how data is collected and how that data can be utilized.



Telemetry data is collected using AWS IoT Core and made available in a data lake, and visualization is provided by the CMS.



17 years of trust, collaboration & growth

Freescale	NXP	NXP	NXP
14 - 125 Employees	158 Employees	321 Employees	600+ Employees
2008 - 2012	2016	2019	2024

MCAL DEVELOPMENT
- IP++ SMCAL VNV station
- SMCAL Maintenance
- IMX MCAL

SDK PRODUCTS
- S32SDK
- Development
- S32SDK Testing

CICDCT ENABLEMENT FOR
- Digital Transform: Tool, Framework,...
- Agile and Autonomous VnV

RADAR VISION
- Radar & Camera DSP
- Object & Lane Detection
- Driver Monitoring System

RTOS
- AUTOSAR OS, OSAL
- FreeRTOS, QNX, Linux, Zephyr

SECURE CONNECT
- Security IVN development,
- VNS, ETH

Cope With Growth (400+)

PROJECT MANAGEMENT OFFICE

From 2008

IP++ Parallel development · MCAL Development · ITG Testing · MCAL Testing · ADAS Testing · PEG porting · Core Self Test · USB Development · JDPMCAL · Automotive Development Suite testing

Quality Assurance

Security IVN · AUTOSAR OS Testing · VNV development and support · Linux OS Testing · S32SDK Development · S32SDKTesting · MCAL Professional Service · Processor Expert IDE in Eclipse

Non-ASR LIN Driver

14 Engineers ⟵ 200+ Engineers ⟶

Frank Steinert,
Liaisons Manager,
NXP Semiconductors

"FPT has proven to be a great partner to NXP and its customers. The team has continued to evolve the NXP offshore development center capabilities, enabling us to more efficiently develop and maintain sophisticated software.

I'm excited to see FPT's expertise leveraged throughout the NXP Partner ecosystem."

Our Portfolio

Core Engineering Services

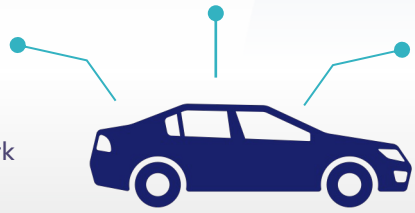
- AUTOSAR MCAL development
- AUTOSAR Complex Driver
- Real-time OS
- Linux BSP
- ADAS Radar and Vision
- Tool and Automation framework
- Ethernet Stack
- FUNCTIONAL SAFETY & ISO26262

Next Gen Technologies

- Secure Car Access

Platform Integration

- AUTOSAR BSW integration
- Automotive Head Unit
- Automotive Cluster



AUTOMOTIVE ENGINEERING

Operating Systems

AUTOSAR · QNX SOFTWARE SYSTEMS · POSIX · Zephyr™

Functional Safety

ISO26262 ASIL D SW development	QMS for functional safety	Applied for AUTOSAR BSW for cross platforms	ISO26262 training course

Connectivity · Driver Replacement · Powertrain & Vehicle Dynamics · Body & Comfort · Networking

Secure Car Access

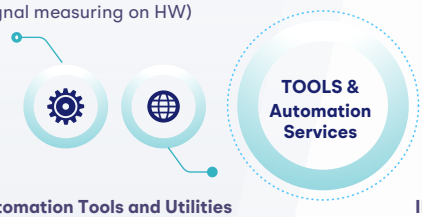
- Device firmware verification
- IC system verification
- Software development enablement

- System validation
- Demonstration
- Customer Support

Tools & Framework

Automation Test Framework
(Verification and Validation, Signal measuring on HW)

Compiler Tools Testing
(Assembler, Compiler, Linker functional)



Automation Tools and Utilities
(Quality documentation, testing supports)

IDE & ConfigurationTools Testing
(NXP S32DS, S32CT, CW, PEx)

- Requirement management
- Test management
- Test automation
- Continuous Integration
- Real-time dashboard & Test metrics
- Centralized database

Cybersecurity

Why Automotive Security?

Raise of automotive hacks the last 5 years

Cybersecurity prevents malicious code or Anomaly behavior, ensuring functional integrity

Car becomes a complexed coding machine, then needs higher safety and security solutions

SCOPE

End-to-end Solutions, from Development Phrase to Post-production Lifecycle

STANDARDS

ISO/SAE 21434, UNECE WP.29, SO 26262, A-SIL (D), TiSAX, A-SPICE Level 3.

PROTECTS

ECUs, Connectivity, Infotainment, OTA,V2X

ISO 21434

- The First Company in Southeast Asia to achieve the **ISO/SAE 21434**
- **150+** clients worldwide
- **50M+** cars on the road
- **4,200+** skilled engineers

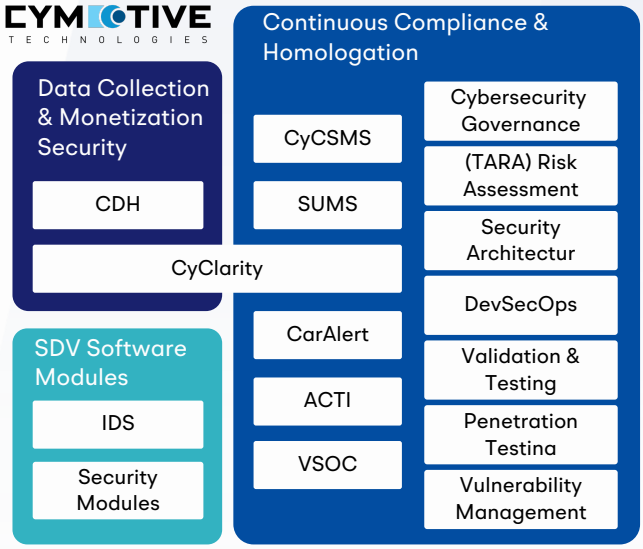
In June 2025, FPT has signed a Memorandum of Understanding (MOU) with CYMOTIVE Technologies, an Israel-based leader in automotive cybersecurity.

Cybersecurity

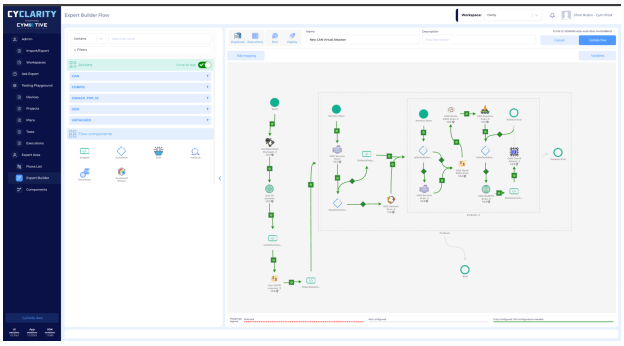
Trusted Solutions Suite for Secure SDV Mobility

CYMOTIVE offers an AI-driven continuous cybersecurity homologation solutions suite for the SDV & connected vehicle ecosystem to:

- Comply with an increasing number of regulatory standards
- Capitalize on rapid industry transformation
- Control risk in an evolving threat landscape



CyClarity (Automated Testing)



CyClarity offers cost-effective & uncompromising cybersecurity validation

A cost-effective and user-friendly validation solution suite for compliantly, comprehensively, and continuously managing in-vehicle and cloud testing end-to-end.

Offering uncompromising automation and customization, CyClarity drives fuzzing, security testing, penetration testing, and validation, upholding driver safety and manufacturer reputation.

IDS (In-vehicle Intrusion Detection) & Cloud Data Connectivity

Real-time in-vehicle cyber attack monitoring, threat detection and risk mitigation for diverse hardware and software architectures and cloud data platforms. Continuously improving, the robust In-Vehicle IDS leverages expertise and threat intelligence from across the CYMOTIVE portfolio for agile cybersecure mobility.

The CYMOTIVE Connected Data Hub is an AI-powered solution for rapid, dynamic, and automatic analysis of embedded IoT or in-vehicle data. It maximizes secure data transfer, enrichment, and monetization and generates data packages and products in compliance with privacy & industry regulations.

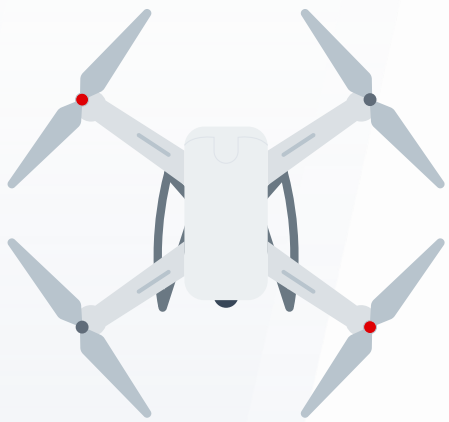
Saolatek

Saolatek is a company specializing in Drone and FPV technology. Saolatek provides drone solutions specifically for developers, providing opportunities to test and apply drone technology in many real-world scenarios.

S650

Aircraft	
Dimensions (unfolded, without propellers)	560×485×305 mm (L×W×H)
Dimensions (folded, with propellers)	250×170×305 mm (L×W×H)
Diagonal Wheelbase	650 mm
Weight Without batteries	Approx. 2.6 kg
Weight With batteries*	Approx. 3.5 kg
Max Takeoff Weight	5 kg (stable lifting force tested) 13.2 kg

Battery*	
Battery Type	Li_Ion 6S (25.2)
Voltage	24V (25.2V when fully charged)
Battery Capacity	8000 mAh
Weight Batteries	0.9 kg
Dimensions	126x70x60 mm (LxWxH)



Feature

For professional dev:

- Four-leg pillar design enhances ease of research and development, making the drone easier to control.
- Foldable design allows for convenient transport and relocation to various drone testing sites.
- Rectangular layout provides extra space on both sides for adding development components based on usage needs.
- Quick replacement of damaged parts (landing gear, motors, propellers, ESCs. mainboard, carbon tubes, etc).
- The durable frame offers strong impact resistance and excellent vibration damping.

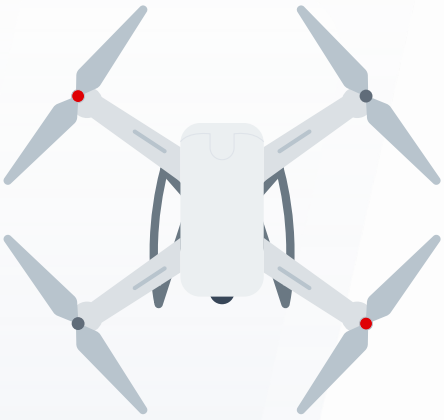
Note:
* The battery specifications listed are for demo purposes only. 5650 supports various battery configurations tailored to specific use cases.

Saolatek

Vatomus S850

Aircraft	
Dimensions (unfolded, without propellers)	850×590×475 mm (L×W×H)
Dimensions (folded, with propellers)	320×280×475 mm (L×W×H)
Diagonal Wheelbase	850 mm
Weight Without batteries	Approx. 4.2 kg
Weight With batteries*	Approx. 6.9 kg
Max Takeoff Weight	9.6 kg

Battery*	
Battery Type	Li_Ion 12S
Voltage	48V
Battery Capacity	11.000 mAh
Weight Batteries	2.7 kg
Dimensions	175x102x95 mm (LxWxH)



Feature

For professional dev:

- **Asymmentric Frame And Motors:** Butterfly-inspired frame for creativity and optimized for performance.
- **Quick Fold Backpack Fit:** Folds in <5s, 30% more compact than the same-size UAV, 1.5x payload boost.
- **Rigid & Lightweight:** Carbon fiber and aluminum alloy frame, high durability.
- **Professional Grade Specs:**
  Payload: 2.7 kg
  Diagonal size: 850 mm
  Frame weight: 4.2 kg
- **OEM Customization Available**

Note:
* The battery specifications listed are for demo purposes only. 5650 supports various battery configurations tailored to specific use cases.
* Supports various payloads.

ABOUT US

FPT Corporation (FPT) is a globally leading technology and IT services provider headquartered in Vietnam and operates in three core sectors: Technology, Telecommunications, and Education.

Over more than three decades, FPT has consistently delivered impactful solutions to millions of individuals and tens of thousands of organizations worldwide. Committed to elevating Vietnam's position on the global tech map and delivering world-class AI-enabled solutions for global enterprises, the Corporation focuses on three critical transformations: Digital Transformation, Intelligence Transformation, and Green Transformation. In 2024, FPT reported a total revenue of USD 2.47 billion and a workforce of over 54,000 employees across its core businesses.

For more information about global IT services, please visit https://fptsoftware.com/