

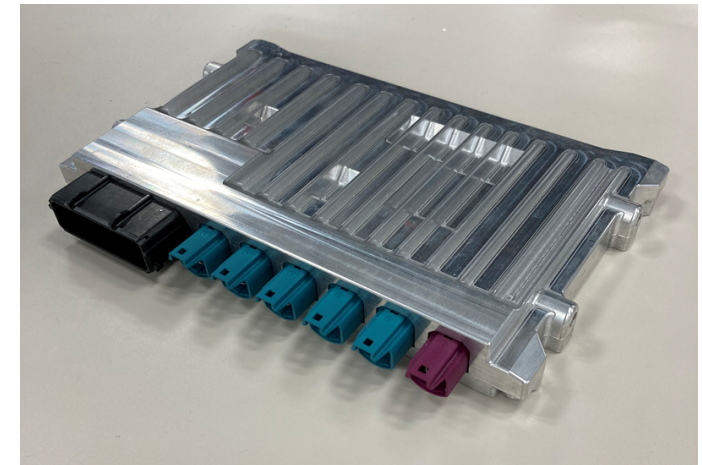
1.1 自動運転コントロールユニット

Autonomous Driving Control Unit (AD-ECU)

- ✓ **OEMの様々な機能要件および自動運転レベルに応じた最適なAD-ECUを提供**
Provide optimal AD-ECU meeting to various OEM functional requirements and autonomous driving levels
- ✓ **プラットフォーム (ハードウェア、OS、ミドルウェア) を含むソフトウェアの標準化を実現**
Standardize software assets on multiple generations including Platform (Hardware, OS, and Middleware)

コンセプト Concept

- **お客様のADアプリケーション開発に貢献**
Hitachi Astemo provides additional value to AD application development at OEM
 - **機能の将来的な拡張、システムコストの削減**
Future expansion of functionality, system cost reduction
 - **センサーアクチュエーターの変更に適したソフトウェア構造で開発効率を向上**
To improve development efficiency with software structure suitable for the change of a sensor actuator
 - **自動運転レベルに合わせたコンピューティングパフォーマンスの選択**
Choosing computing performance for autonomous driving level
- **高性能マイコンやSoCを搭載できる、強制冷却も視野に入れた冷却構造、耐ノイズ構造を実現**
Achieves an appropriate cooling structure that is also a candidate for active cooling and EMC resistance structure for mounting high-performance microcomputers, SoCs.



Prototype AD Controller
Gen1.5

1.2 自動運転コントロールユニットの特長

Features of Autonomous Driving Control Unit (AD-ECU)

- ✓ **OEMの様々な機能要件および自動運転レベルに応じた最適なAD-ECUを提供**
Provide optimal AD-ECU meeting to various OEM functional requirements and autonomous driving levels
- ✓ **プラットフォーム (ハードウェア、OS、ミドルウェア) によるアプリの世代間流用を実現**
Reuse software assets inter-generationally with the platform; Hardware, OS and Middle Ware

概要及び特長 Outline and Features

- **機能安全規格を実現するプラットフォーム技術**
Platform technology to realize functional safety standards.
- **演算の多いAI処理をAcceleratorに集約し, 高速処理, 低消費を実現**
Achieve high-speed processing and low consumption by implementation of AI processing with many operations in Accelerator.

AD-ECU Gen3 (with AI)

	Vehicle Control	Fusion	Peripheral Recognition												
S/W	<table border="1"> <tr> <td>Hitachi App</td> <td>OEM App</td> </tr> <tr> <td colspan="2">Hitachi BSW</td> </tr> <tr> <td colspan="2">AUTOSAR (OS)</td> </tr> </table>	Hitachi App	OEM App	Hitachi BSW		AUTOSAR (OS)		<table border="1"> <tr> <td>Hitachi App</td> <td>OEM App</td> </tr> <tr> <td colspan="2">Hitachi BSW</td> </tr> <tr> <td colspan="2">INTEGRITY (OS)</td> </tr> </table>	Hitachi App	OEM App	Hitachi BSW		INTEGRITY (OS)		Accelerator
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	Safety CPU	Performance CPU	AI Accelerator												

1.3 自動運転コントロールユニット ロードマップ

Autonomous Driving Control Unit (AD-ECU) Roadmap

- ✓ **高信頼化MWでASIL-D, -Bを実現することにより、自動運転に必要な機能安全に対応**
Support functional safety required for autonomous driving by realizing ASIL D/B with highly reliable MW
- ✓ **高速道路や一般道での自動運転に必要なAI (DNN) 処理を低電力・低コストで実現**
Realize AI (DNN) processing required for automatic driving on highway and surface street at low power and low cost

