An Ecosystem Approach to Drive RISC-V Adoption in Automotive Designs

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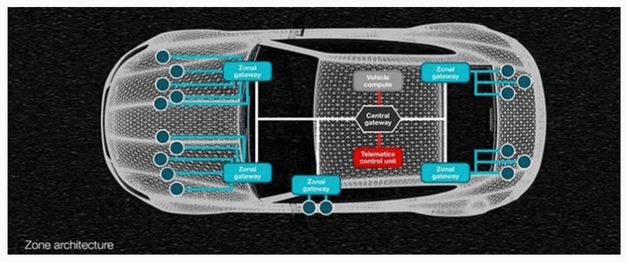
Andes Technology

Automotive Vehicle Revolution => new solutions needed

Andes RISC-V IP & Ecosystem partners work together to provide the solutions


BEV



SDV

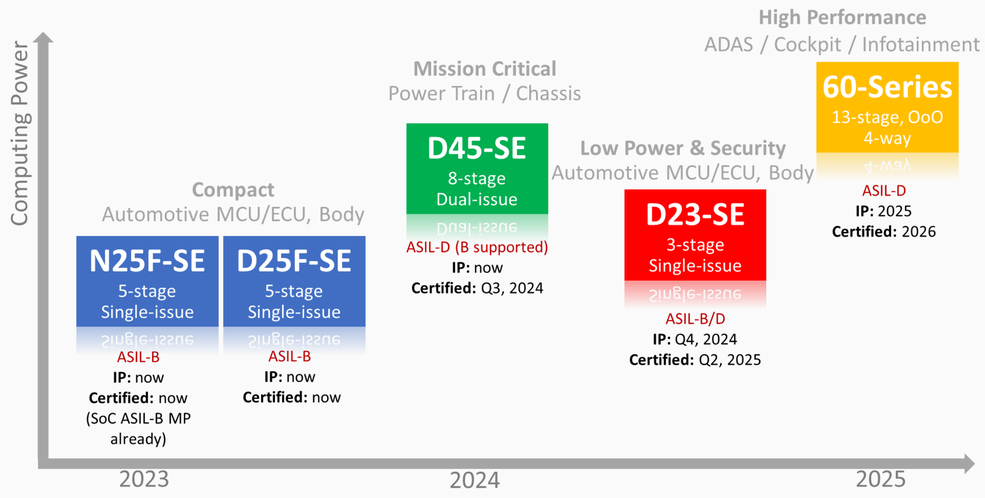
V2X

x-by-wire

Autonomous Driving

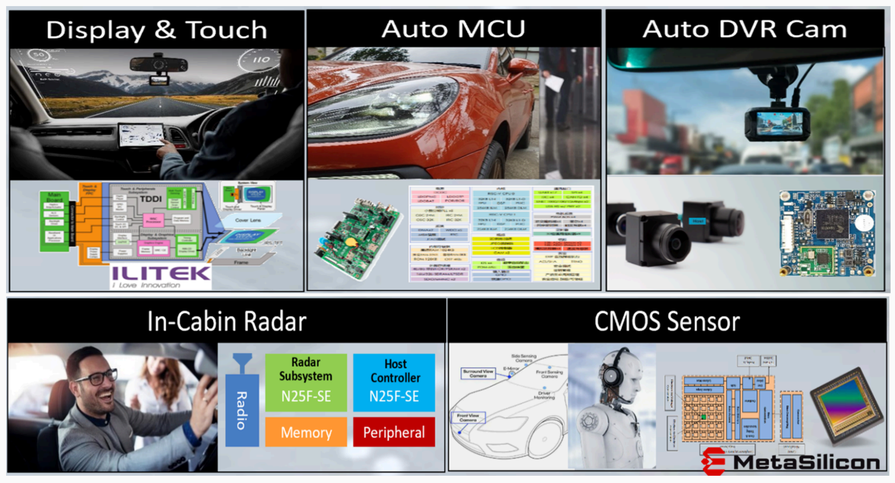
AndesCore™ RISC-V Functional Safety Cores Line-up

Silicon proven design with wide performance points, safety assurance levels, advanced roadmap



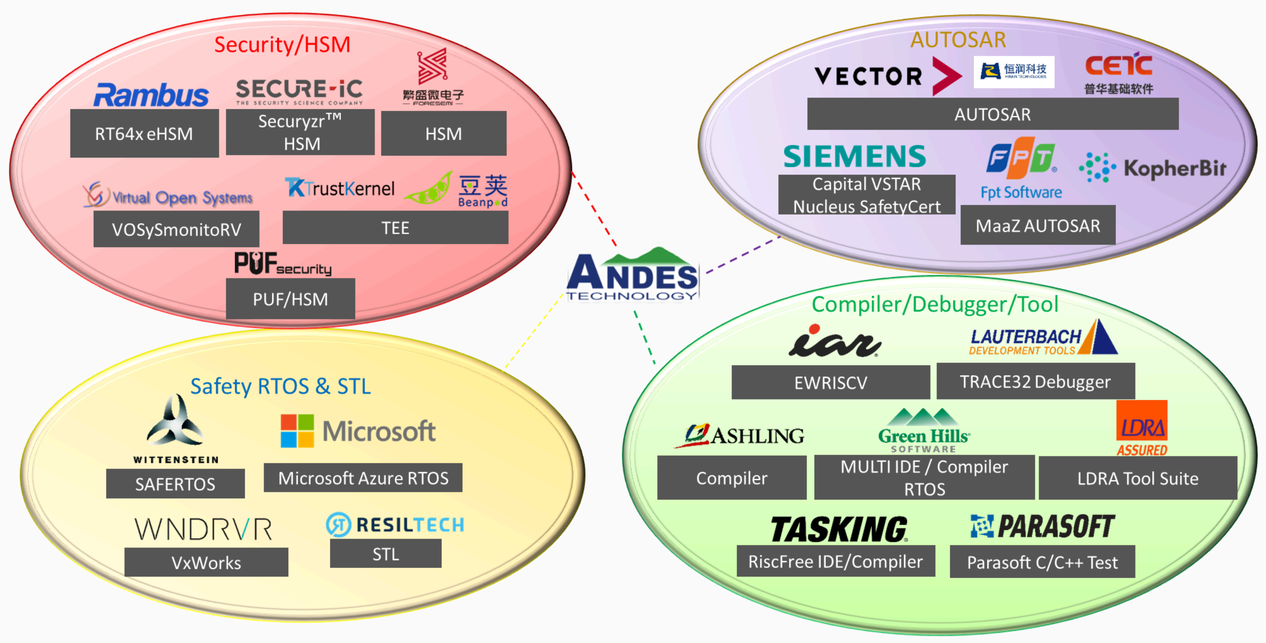
Andes & Partners are driving automotive chip innovations

- N/D25F-SE achieved ISO-26262 ASIL-B full compliance
- Over a dozen customers' automotive projects based on 25-SE series
- ILITEK (Touch Display Driver IC) and MetaSilicon (CMOS sensor IC) have public PR

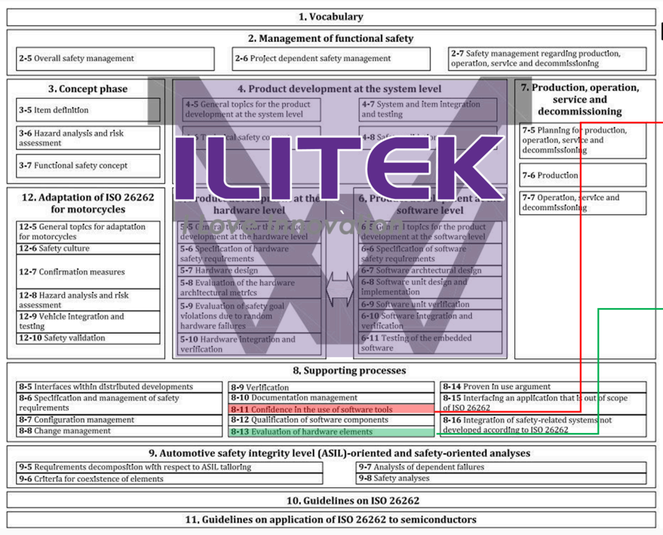


Andes Automotive Ecosystem Partners

PR with Tasking, WHIS, Vector, HiRain, MachineWare, Ansys, LDRA, IAR, Solid Sands, & Parasoft for automotive collaborations



Andes + IAR + ILITEK



ILITEK ILI6600A Automotive TDDI
Leveraging Andes Safety Package Work Products to achieve ISO26262 ASIL-B Ready by SGS TUV Saar

8-11 Confidence in the use of software tools

iar

8-13 Evaluation of hardware elements

ANDES TECHNOLOGY

Safety Mechanisms Implemented in Andes FUSA Cores

Mainstream Processing

N25F-SE
5-stage
Single-issue

D25F-SE
5-stage
Single-issue

Common Safety Features
- Advanced **ECC**
  - Address Decoder
  - White Noise Protection
  - Error Status Indication
- Core Trap Status Bus Interface
- Stack Protection
  - StackSafe
- NMI (Non-maskable Interrupt)
- PMP

External Safety Mechanisms
- WDT (Watch Dog Timer)
- Software Test Library (STL)
  - Partner: RESILTECH
  - Resiltech could provide chip-level STL service

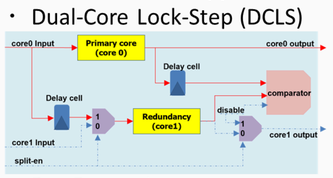
Mission Critical

D45-SE
8-stage
Dual-issue

Low Power & Security

D23-SE
3-stage
Single-issue

D45-SE and D23-SE applied:
- Dual-Core Lock-Step (DCLS)



- Bus Protection
  - Information Redundancy
  - Frame Counter
  - Timeout Detection

Complete RISC-V automotive solutions with proven AndesCore™ IP

Visit Andes' website for more info