NXP's partnerships with universities in the framework of subsidized projects

Filip Rosu

Radar Innovations / Algorithm Architect

NXP Semiconductors

25-Oct-2024
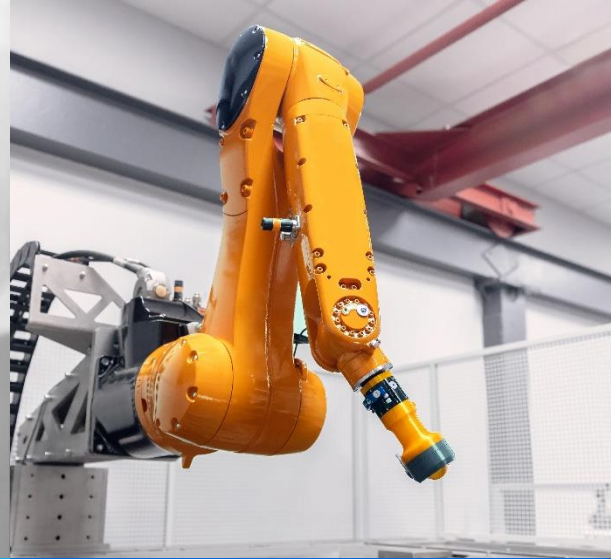
A smarter world starts with NXP

We design purpose-built, rigorously tested technologies that enable devices to sense, think, connect and act intelligently to improve people's daily lives.
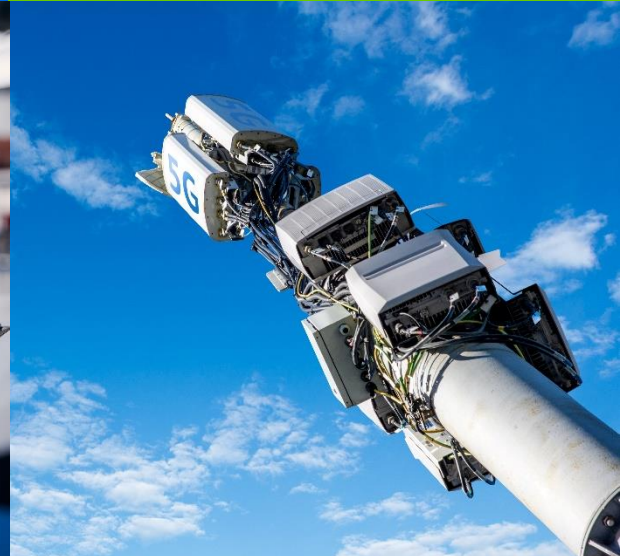
Automotive

Industrial & IoT

Mobile

Smart Home

Smart City

Communication Infrastructure

SENTHICOM At a Glance

2Q23
Start

3
Products

6+2
Universities + SMEs

4Q28
End

30+
Research Themes

SENTHICOM – NXP Proposal Under IPCEI Program

IPCEI workstreams

Radar Sensor Systems for Autonomous Platforms
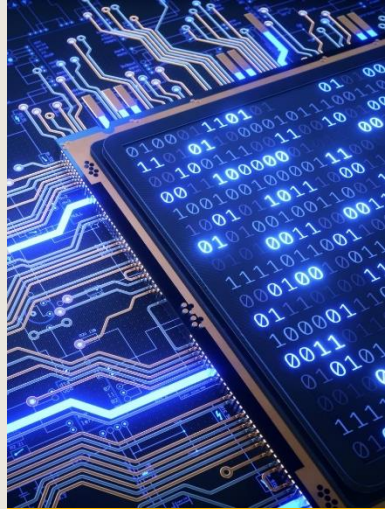
Automotive Microprocessors

Telecommunications

Work Packages 3 (Components and Modules) and 4 (Subsystems and Systems):
HW + SW Co-design; Processor Software Development Kit (Firmware, Runtime Software, Design Tools)
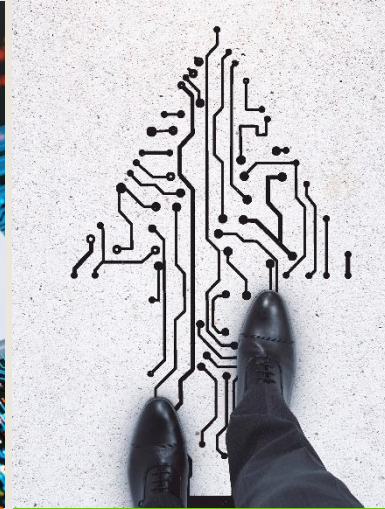
General Research Themes with Indirect Participants

Domain Specific Accelerators, Methods, Algorithms

Safe and Secure Embedded Programming

Security

MESH – MicroElectronics Services Hubs

Augmentation of Use Cases

Competency Development

SENSE - Radar Sensor Systems for Autonomous Platforms

Advanced **D**river **A**ssistance **S**ystems

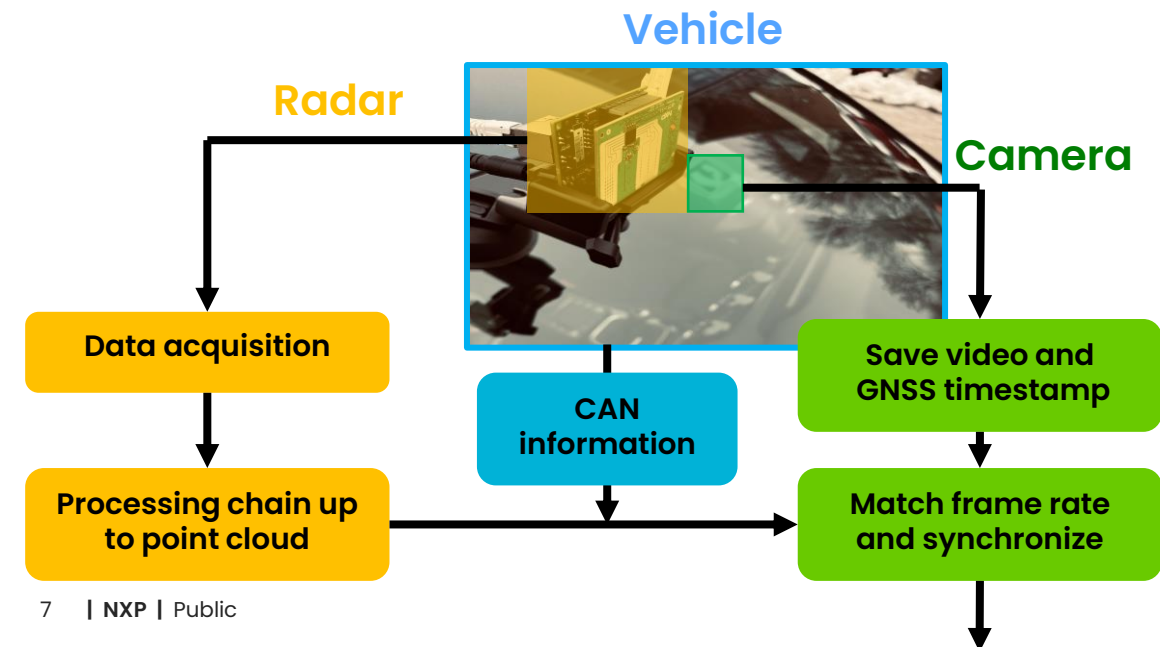| Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
You are driving when these systems are engaged			You are not driving when these systems are engaged		
Driver Only	Assisted Driving	Partial Automation	Conditional Automation	High Automation	Full Automation
Human driver controls all aspects of driving.	Partial system assistance.	Partially automated driving under certain conditions	Fully automated driving under certain conditions	Almost fully automated driving under all conditions	Fully automated system, driver is not required.
	Feet-off	Hands-off	Eyes-off	Mind-off	No Driver

Radar Sensor Systems for Autonomous Platforms

SENSE project directions in collaboration with Universities

➢ **4D point cloud resolution enhancement**
➢ **Data fusion**
➢ **Physics driven AI models**

Vehicle

Radar

Camera

| Data acquisition |

| CAN information |

| Save video and GNSS timestamp |

| Processing chain up to point cloud |

| Match frame rate and synchronize |

Thank you!

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