Mobile Robotics Ecosystem

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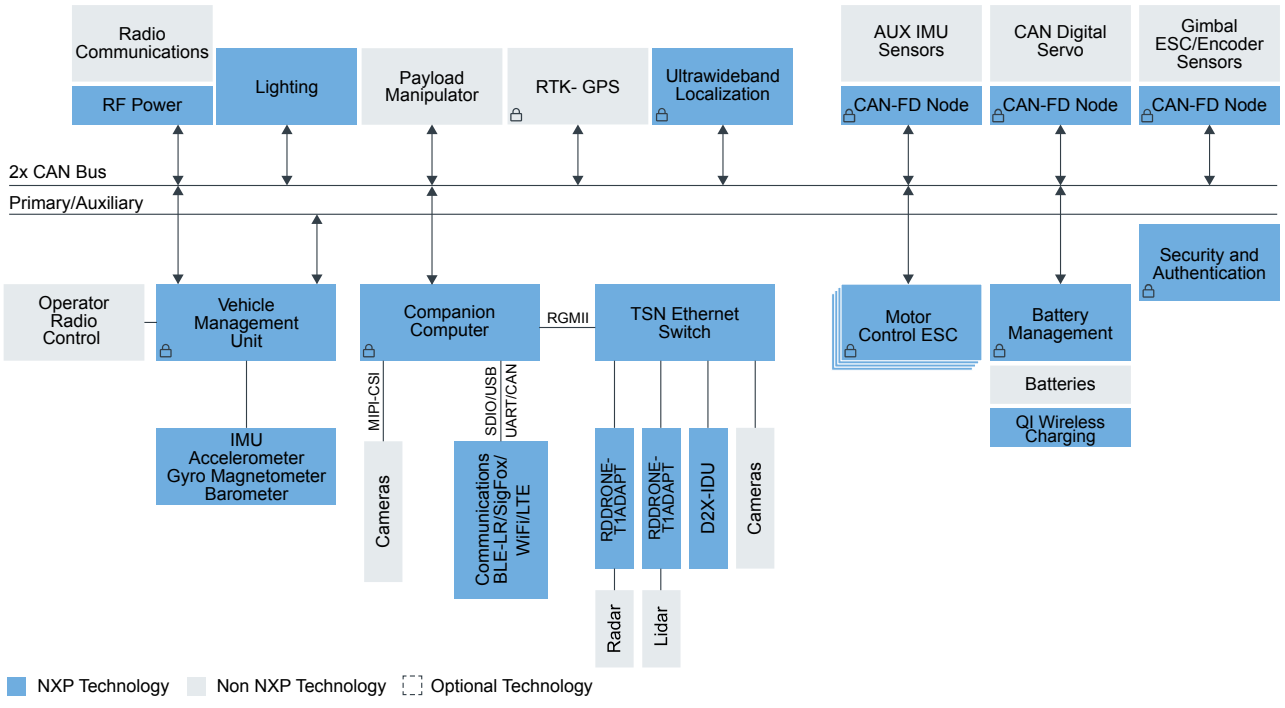
The Hovergames drone system is a modular flying robot development system that allows anyone interested in drone and automated driving technology to develop their own. The drone is PX4-enabled, the largest commercially deployed open source flight stack.

The platform is open and extensible. New components, from sensors to processors, can be easily added. The combination makes it helpful for learning and developing new forms of industrial mobility, whether it flies, roves on land or glides in water.

Mobile Robotics Architecture Block Diagram



Recommended Products for Mobile Robotics Architecture	
RF Power	• MMRF2010N: 1030-1090 MHz, 250 W Peak, 50 V RF LDMOS Integrated Power Amplifiers • AFIC10275N: 978-1090 MHz, 250 W Peak, 50 V Airfast® RF LDMOS Wideband Integrated Amplifiers
Lighting	• ASL341ySHN: Three-Channel Automotive LED Buck Driver • ASL241ySHN: Two-Channel Automotive LED Buck Driver

Ultrawideband	• NCJ29D5: Trimension™ NCJ29D5: UWB IC for Automotive Applications • S32K1: S32K1 Microcontrollers for Automotive General Purpose
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CAN-FD Node	• CAN with Flexible Data Rate: High Speed CAN with Flexible Data Rate (CAN FD) • CAN Signal Improvement: CAN Signal Improvement Capability (SIC) • Secure CAN Transceivers: Secure TJA115x CAN Transceiver Family
Vehicle Management Unit	• i.MX RT Crossover MCUs: i.MX RT Crossover MCUs • K Series Arm Cortex-M4: Kinetis® K Series: High-Performance Microcontrollers (MCUs) Based on Arm® Cortex®-M4 Core
IMU	• FXLS8964AF: ±2g/±4g/±8g/±16g, Low-Power 12-Bit Digital Accelerometer
Companion Computer	• i.MX8MMINI: i.MX 8M Mini - Arm® Cortex®-A53, Cortex-M4, Audio, Voice, Video • IMX8MPLUS: i.MX 8M Plus – Arm® Cortex®-A53, Machine Learning, Vision, Multimedia and Industrial IoT
Communications	• QN9080: QN908x: Ultra-Low-Power Bluetooth Low Energy System on Chip Solution • OL2385AHN: Low-Power Multi-Channel UHF RF Wireless Platform • KW41Z: Kinetis® KW41Z-2.4 GHz Dual Mode: Bluetooth® Low Energy and 802.15.4 Wireless Radio Microcontroller (MCU) based on Arm® Cortex®-M0+ Core
TSN Ethernet Switch	• SJA1110: Multi-Gig Safe and Secure TSN Ethernet Switch with Integrated 100BASE-T1 PHYs
D2X - IDU	• SAF5400: RoadLINK® SAF5400 Single Chip Modem for V2X
Motor Control ESC	• i.MX-RT1050: i.MX RT1050 Crossover MCU with Arm® Cortex®-M7 Core • S32K1: S32K1 Microcontrollers for Automotive General Purpose • KV Series Arm Cortex-M4/M0+/M7: KV Series: Real-Time Motor Control and Power Conversion MCUs Based on Arm® Cortex®-M0+/M4/M7
Battery Management	• MC33772B: 6-Channel Li-Ion Battery Cell Controller IC • S32K1: S32K1 Microcontrollers for Automotive General Purpose
Security and Authentication	• SE050: EdgeLock® SE050: Plug and Trust Secure Element Family – Enhanced IoT security with high flexibility
Qi Wireless Charging	• Single Coil Wireless Power Solution
Ethernet Media Converter	• Ethernet Media Converter for Drones, Rovers, Mobile Robotics and Automotive
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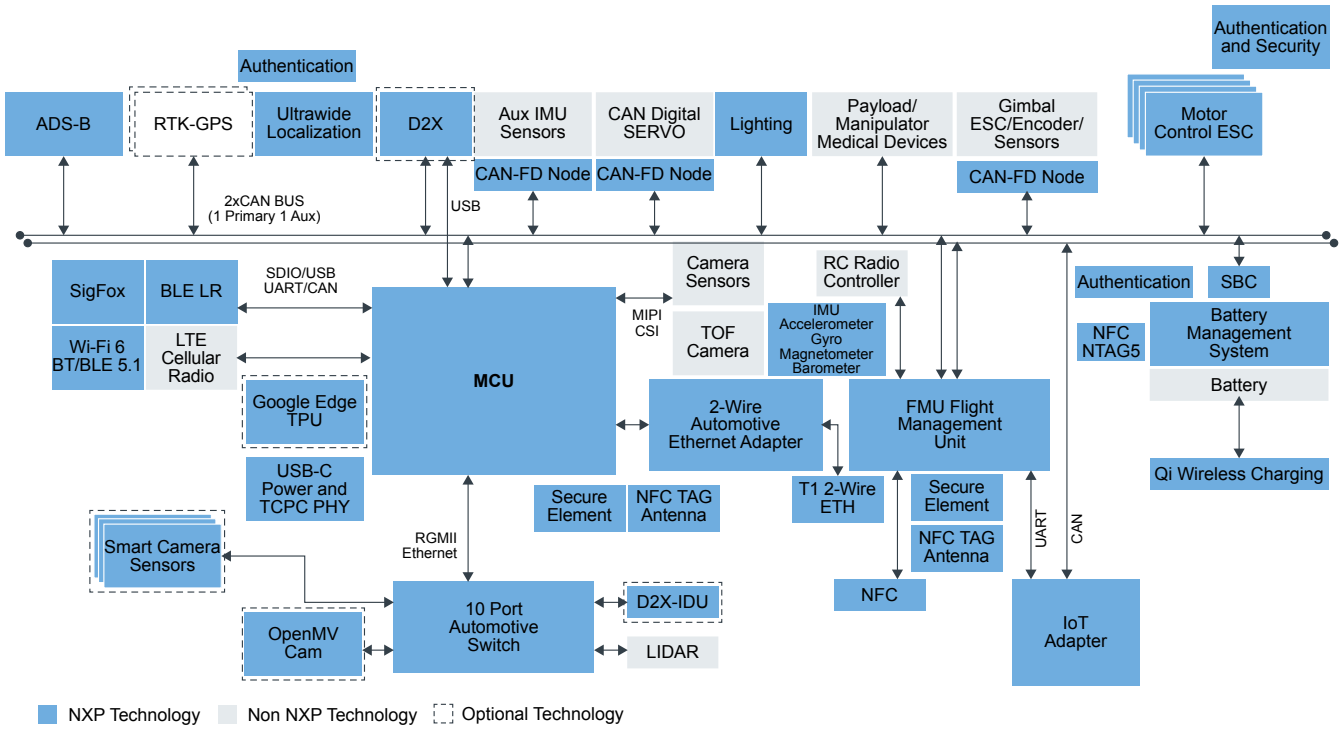
Hovergames Drone Systems Block Diagram



Recommended Products for Hovergames Drone Systems	
Authentication	• SE050: EdgeLock® SE050: Plug and Trust Secure Element Family – Enhanced IoT security with high flexibility
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CAN-FD NODE	• S32K1: S32K1 Microcontrollers for Automotive General Purpose • CAN with Flexible Data Rate: High Speed CAN with Flexible Data Rate (CAN FD) • CAN Signal Improvement: CAN Signal Improvement Capability (SIC) • Secure CAN Transceivers: Secure TJA115x CAN Transceiver Family
Lighting	• PCA9685: 16-Channel, 12-Bit PWM Fm+ I²C-Bus LED Controller • ASL341ySHN: Three-Channel Automotive LED Buck Driver • ASL5XXXYHZ: Smart Matrix LED Controller for Automotive Lighting
SBC	• UJA1169ATK: Mini High-Speed CAN System Basis Chip
NFC	• NTAG5-BOOST: NTAG® 5 Boost: NFC Forum-Compliant I²C Bridge for Tiny Devices • NCx3320: Automotive-Grade NFC Frontend IC
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Sensors	• Accelerometers: Accelerometers • Barometric Pressure 15 to 150 kPa: Barometric Pressure 15 to 150 kPa
USB-C	• PTN5110: USB PD TCPC PHY IC • NX20P3483UK: USB PD and Type-C High-Voltage Sink/Source Combo Switch with Protection
Bluetooth + Wi-Fi 6	• Wi-Fi&reg + Bluetooth&reg + 802.15.4: Wi-Fi&reg + Bluetooth&reg + 802.15.4
Bluetooth + Wi-Fi 6	• Wi-Fi&reg + Bluetooth&reg + 802.15.4: Wi-Fi&reg + Bluetooth&reg + 802.15.4
SigFox	• OL2385AHN: Low-Power Multi-Channel UHF RF Wireless Platform
Automotive Switch	• SJA1110: Multi-Gig Safe and Secure TSN Ethernet Switch with Integrated 100BASE-T1 PHYs • VR5510: Multi-Channel (9) PMIC for S32G Processor – 8 High Power, 1 Low Power, Fit for ASIL D Safety Level
Google Edge TPU	• Coral Dev Board TPU
D2X - IDU	• i.MX 6 Processors: i.MX 6 Series Applications Processors: Multicore, Arm® Cortex®-A7 Core, Cortex-A9 Core, Cortex-M4 Core
Smart Camera	• Front View Camera: Front View Camera • i.MX8MMINI: i.MX 8M Mini - Arm® Cortex®-A53, Cortex-M4, Audio, Voice, Video
OpenMV Cam	• i.MX-RT1060: i.MX RT1060: Crossover MCU with Arm® Cortex®-M7
Motor Control ESC	• KV4x: Kinetis KV4x-168 MHz, High Performance Motor / Power Conversion MCUs based on Arm® Cortex®-M4 • i.MX RT Crossover MCUs: i.MX RT Crossover MCUs • S32K1: S32K1 Microcontrollers for Automotive General Purpose
Qi Wireless Charging	• Single Coil Wireless Power Solution
Battery Management Systems	• Smart Battery Management for Mobile Robotics
IoT Adapter	• Rapid-IOT to Drone Adapter Board • NXP® Rapid IoT Prototyping Kit
Ethernet Media Converter	• Ethernet Media Converter for Drones, Rovers, Mobile Robotics and Automotive
PX4 Robotic Drone FMU (RDDRONE-FMUK66)	• PX4 Robotic Drone Vehicle/Flight Management Unit (VMU/FMU) - RDDRONE-FMUK66
Ultrawideband	• NCJ29D5: Trimension™ NCJ29D5: UWB IC for Automotive Applications • S32K1: S32K1 Microcontrollers for Automotive General Purpose

D2X - IDU	• SAF5400: RoadLINK® SAF5400 Single Chip Modem for V2X
Ethernet Media Converter	• Ethernet Media Converter for Drones, Rovers, Mobile Robotics and Automotive

View our complete solution for Mobile Robotics Ecosystem.

Note: The information on this document is subject to change without notice.