THE TYPICAL PRODUCTS WE BUILD
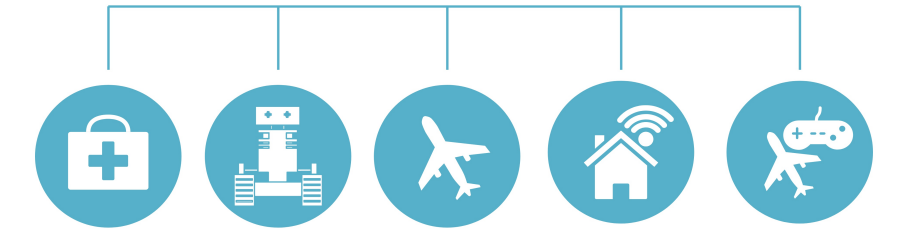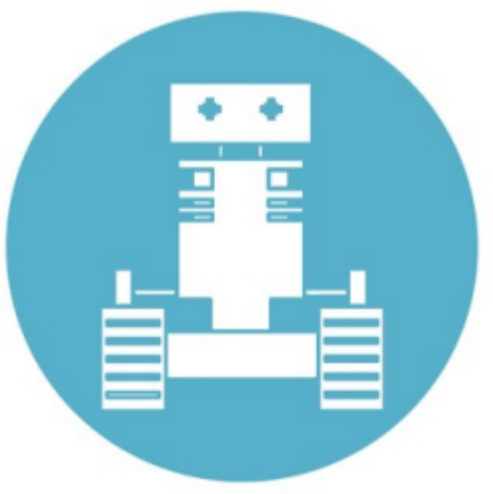
OUR EXPERTISE : SYSTEMS SOFTWARE DESIGN

▸ BSP + OS design on Linux / Zephyr / RIOT / FreeRTOS

▸ Support to hardware designers for software integration

▸ System & application software design :
- Device drivers
- Control software
- User Interfaces
- Cloud platforms & applications
- Embedded & online web applications

▸ System updates / Over-the-air updates

▸ Connectivity : wired / wireless / satellite / LoRaWAN links

▸ Security : Secure boot, system encryption, key management, system hardening

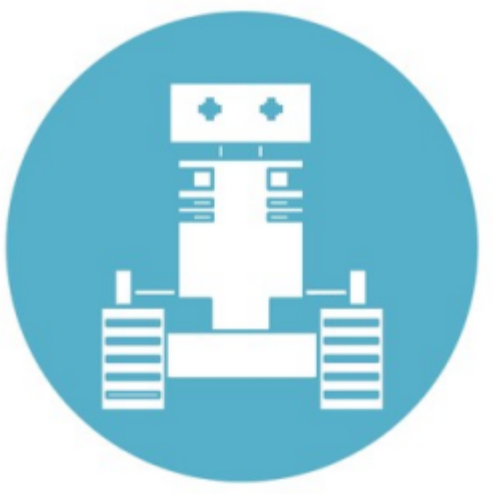▸ Reliability and traceability for DO-178 / IEC 62304 process compliance

Custom BSP for an autonomous robot (AGV) - Automatic warehouse conveyor

▸ Yocto BSP on i.MX6 / Mainline Linux Kernel / PREEMPT_RT real-time support

▸ Double bank OS / Automated software & bootloader updates

▸ Linux device-tree extensions & adaptions

▸ Ethernet, RS485 & CAN bus support

▸ SDK export for application software development

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CUSTOMER CASE : ROBOTIZED MEDICAL BED

Embedded Software Design – Robotized medical bed for respiratory issues therapy

- ‣ Custom Buildroot-based Linux OS on i.MX6 CPU

- ‣ Custom HMI and control software using C++/Qt

- ‣ Sensors and actuators data feed management

- ‣ Ethernet, CAN, ModBus/TCP, UART, USB interfaces support

- ‣ Double bank OS with integrated software updates

- ‣ Medial-grade process for traceability & reliability

CUSTOMER CASE : COMMERCIAL AIRCRAFT NETWORK BACKBONE

OS & System Software for an avionics network and data controller

▸ Custom OS & boot loader features

▸ Custom software interfaces and services for ARINC / FPGA / discrete connectivity

▸ Linux network switch improvements integrated into the mainline tree

▸ Integration of hardware Ethernet switches with Software Defined Networking features

▸ System security & integrity hardening

▸ Configuration management system w/ embedded Web Interface

▸ Avionics (DO-178E) process for traceability & reliability

CUSTOMER CASE : SMART BUILDING WATER METER & VALVE

Full-Stack Software Design for a connected water meter and valve

▸ Support to the hardware design team for fluid software integration

▸ Custom OS & boot loader features design

▸ Custom drivers for water meter and control valve hardware

▸ Embedded config management system + web interface

▸ Amazon (AWS IoT) based cloud data management platform

▸ End-User web application for online product management

Linux Ethernet Switch drivers for aerospace Infotainment systems

▸ Improve Linux support for hardware-accelerated Ethernet switching

▸ This focused mainly on the Marvell LinkStreet switches family

▸ Collaborate with upstream kernel maintainers for mainline integration