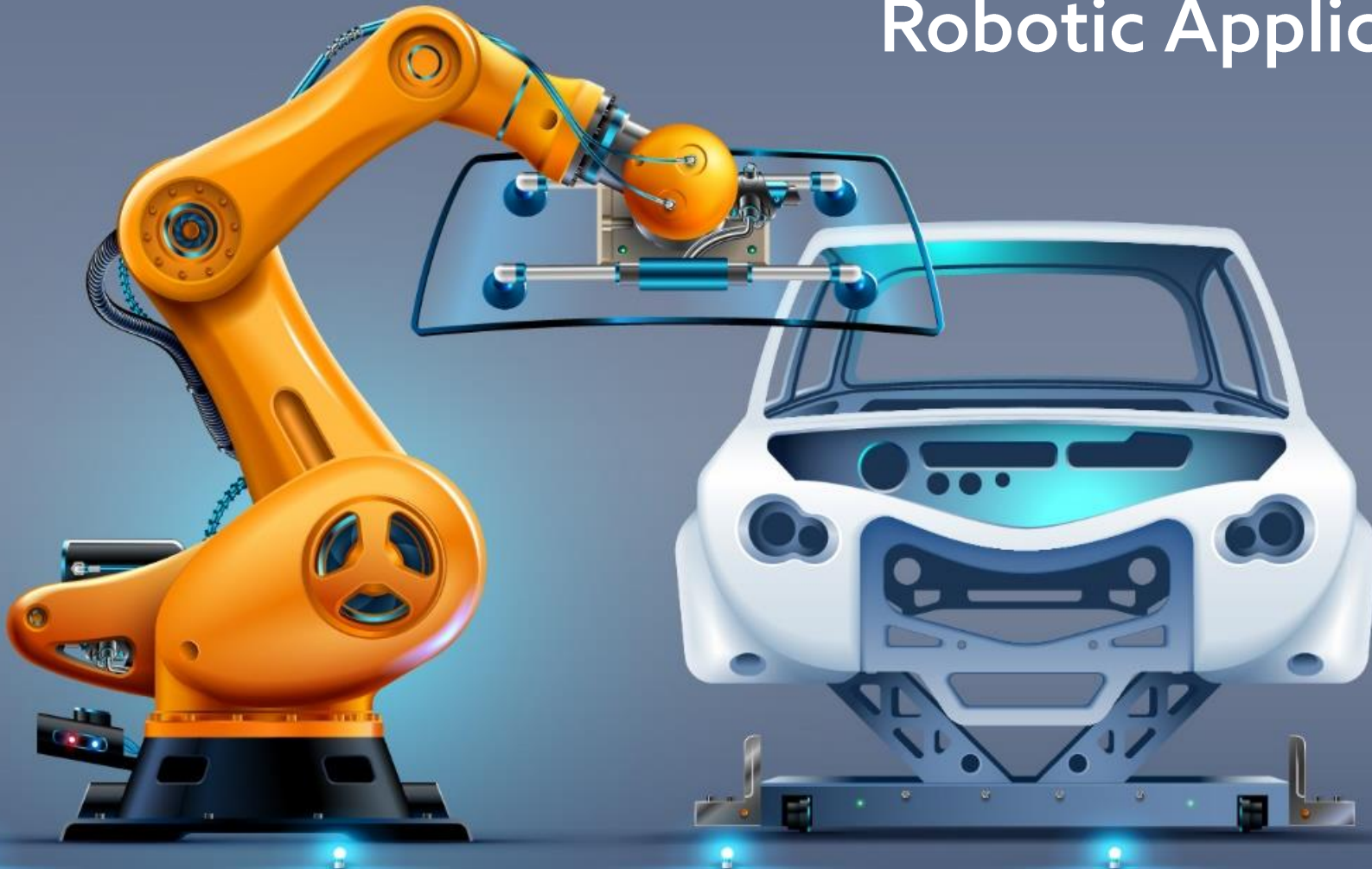# NuttX RTOS Enablement for Robotic Applications

NUTTX RTOS PORTING ON MICROCONTROLLER

NuttX RTOS ver 8.2 to ver 10 enablement for Microcontroller – Contributed to Open-source community of NuttX RTOS

Scope

- Development of NuttX RTOS port on microcontroller for Robotic applications
- Contributed NuttX RTOS port to the main branch of Apache NuttX open source community
- Support for
  - o Boot-up RTOS ARCH features like context switching, task synchronization, etc
  - o Interface drivers – Ethernet, USB-Host/Hub/Device, UART, I2C, SPI, RTC, Timers, LCD, CAN Bus
  - o Testing – File system & Networking Sub-system on target microcontroller platform

Challenges

- Porting NuttX RTOS with no existing available support for the target microcontroller platform
- Moving the building platform from Linux to Cygwin/ WSL2 on Windows
- Integrating proprietary complier tool for debugging purpose

Tools and Technologies

- Proprietary complier
- Cygwin ver. 3.0.7
- GNU toolchain
- Kconfig-Front end ver. 4.11.0

MARKET	BUSINESS BENEFIT	DELIVERY MODEL
Industrial/ Robotics	Ease of integrating Micro-ROS framework for Robotics	Fixed bid