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
  - Boot-up RTOS ARCH features like context switching, task synchronization, etc
  - Interface drivers – Ethernet, USB-Host/Hub/Device, UART, I2C, SPI, RTC, Timers, LCD, CAN Bus
  - 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 compiler tool for debugging purpose

Tools and Technologies

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

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<th>MARKET</th>
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<th>DELIVERY MODEL</th>
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<td>Industrial/Robotics</td>
<td>Ease of integrating Micro-ROS framework for Robotics</td>
<td>Fixed bid</td>
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