UZ100 for Robotics

Aims of Robotics ~ *For easy development of Robot* ~

Robot development requires ***many technical hurdles*** *!*
Therefore, robot applications are ***risky**** *!*
*(*Time, resource, and money)*

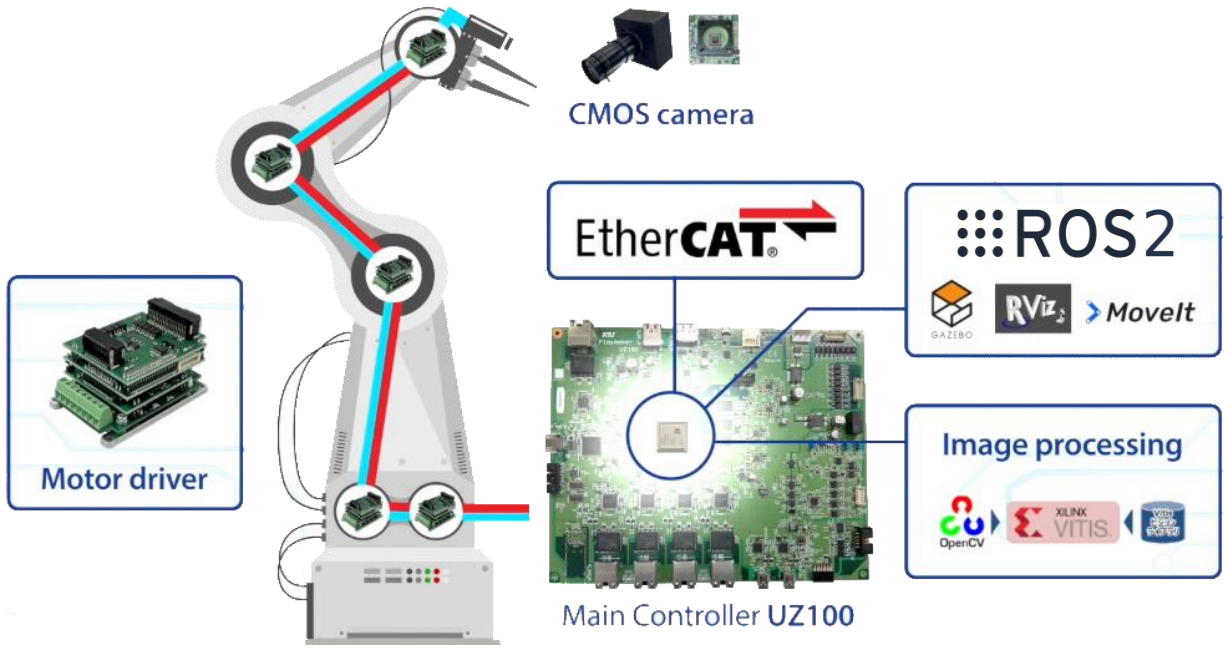
Technical hurdles

- Mechanical design
- Motor control
- Communication technology
- Electrical design
- Software application

• Overcome technical hurdles !
• Reduce the business risk !

Robotics company can focus on their own idea.
(such as unique mechanical design, software application)

Robotics key technologies that KSJ offers



■ *ROS2*
Open-technology,
Robot operating system

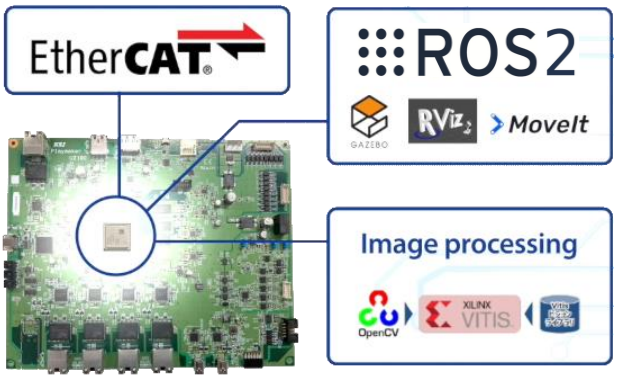
■ *EtherCAT*
FPGA-based master stack achieves high-speed cyclic, low jitter !

■ *Image processing*
Collaboration of FPGA and CPU
Co-operation with other systems

■ *Motor driver*
Optimized for built-in robots.

UZ100 for Robotics

UZ100 board for robotics



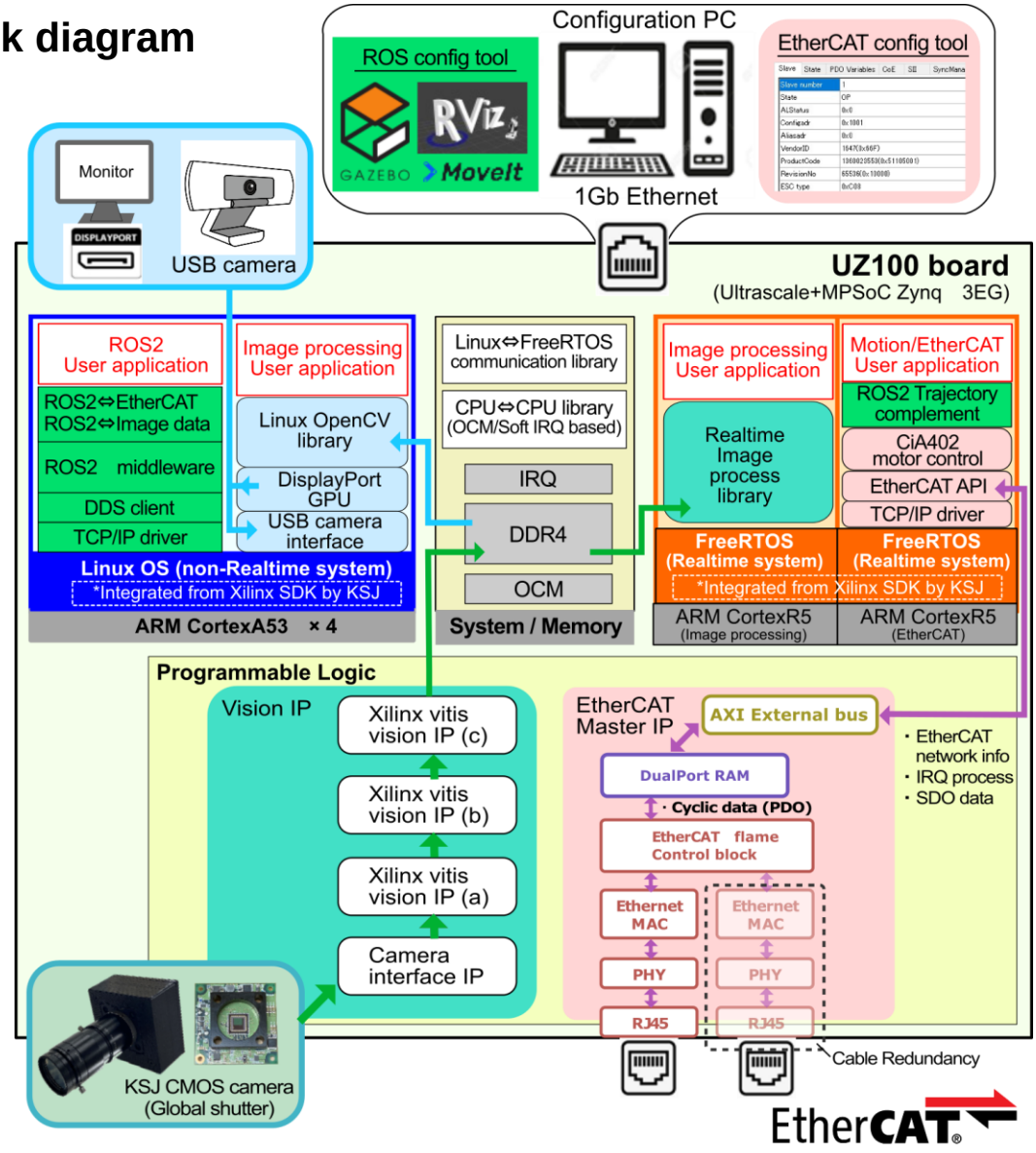
Main Controller **UZ100**

UZ100 Size	Main IC
250 × 200 mm	AMD Xilinx Ultrascale + MPSoC

UZ100 is a control board,
equipped with many interfaces to control **ROS2, EtherCAT,** and **Image Processing.**

Hybrid system of real-time and non-real-time is available.

UZ100 Block diagram



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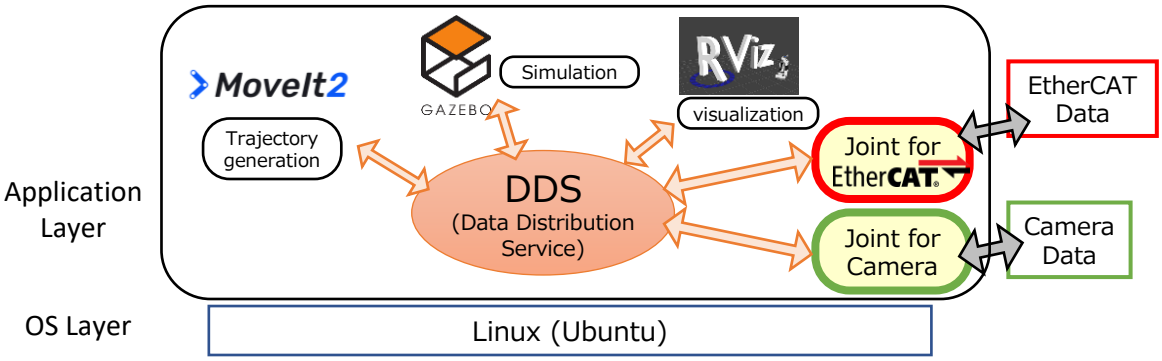
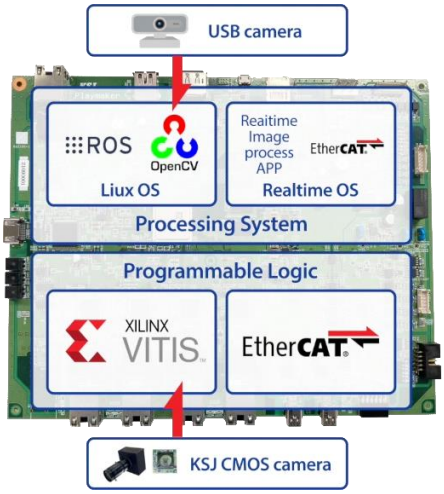
ROS2



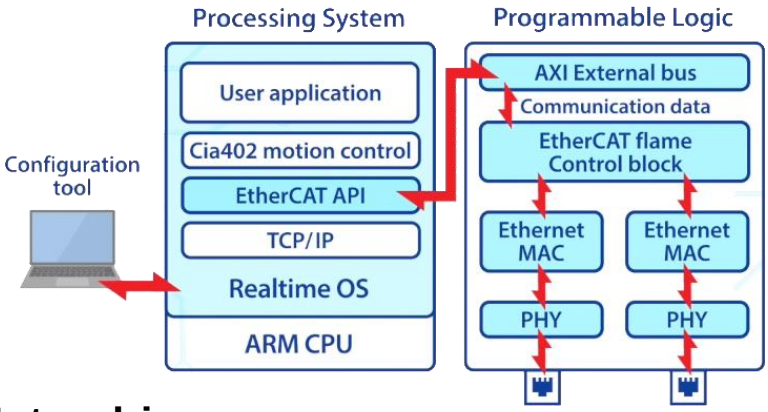
ROS2 application needs to be customized for each robot.
KOBOT can provide ROS2 application support services.

Image processing

- *Customization*
  User can enjoy the combination of FPGA library & Linux Open CV library.
- *Co-operation*
  Inside the single chip,
  High-speed co-operation with
  ROS, EtherCAT system, etc.,.



EtherCAT



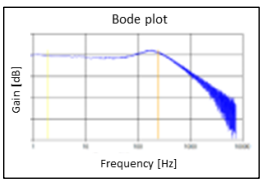
High-performance
FPGA-based master !!

- High-speed cyclic communication less than 100 µsec
- Low jitter of transmitting frame less than 50 nsec

Motor driver

Inros series

Kyros series



Tuning tool

We have released several lineups.
- Shape
- Rated Current
- Performance

Tuning tool is also available.

Please refer to other flyers.

UZ100 for KSJ Robotics

UZ100 board specifications

Hardware Specifications		
Main IC	AMD Xilinx Zynq Utrascale + MPSoC	XCZU3EG-L1SFVC784I
Memory	DRAM	DDR4 SDRAM 2GB
	Boot ROM	QSPI NOR Flash 128MB
	Micro SD socket	Correspond to SDHC/SDXC 128GB (max)
	EEPROM	16 kbit
Ethernet	1 Gb Ethernet	1 Gb Ethernet × 5 (for EtherCAT master/slave, TCP/IP, GigE vision)
USB	USB 3.0	USB type A × 1 USB 3.0 host
	USB UART	Micro USB type A or B × 1 (for debug)
CMOS camera	CML input	Mini display port connector × 2 (for CMOS camera input to PL)
Display output	DisplayPort	DisplayPort1.1a
LED/Switch	LED	RJ45 LINK/ACT EtherCAT slave RUN/ERROR LED × 2 Power/Reset/FPGA load LED General (Green/Red) × 2
	Switch	EtherCAT slave ID: Rotary SW × 3 4 bit DIP SW × 2 Button SW × 1 (for re-boot)
Expansion I/O	Pmod	GPIO 8 bit 3.3V signal
	Isolated I/O	Input 4 ch., 3.3～24V, max 10mA Output 4 ch., 3.3～24V, max 10mA High-speed(10MHz) Input 4 ch., 3.3～5V, max 10mA High-speed(10MHz) Output 4 ch., 3.3～5V, max 3mA
Analog	Input/Output	Input 4 ch., ±10V (ADS124S08, 24 bit) Output 2 ch., 0～10V, (DAC8532, 16 bit)
Others		
Power supply	Voltage	DC 24V ± 5%
	Current	Rated current 1 A, Peak current 4.5 A
CE marking		Compliant
Size, Weight		250 × 200 × 2.4 mm, 410 g

Sales window

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