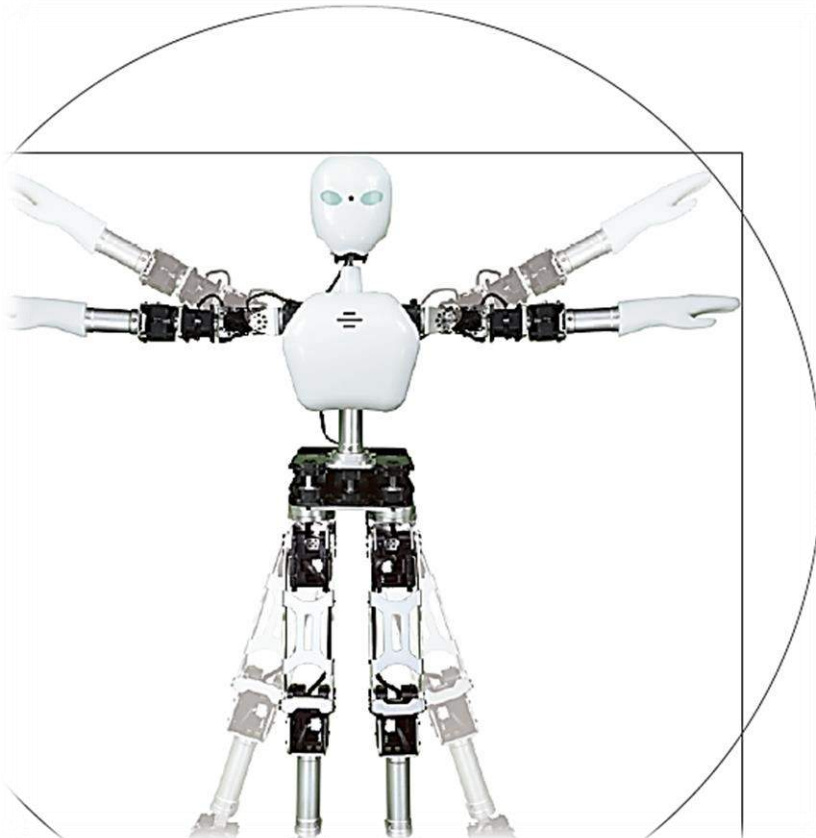


UXA-90 Light Specification

Multi-purpose Biped Humanoid Robot



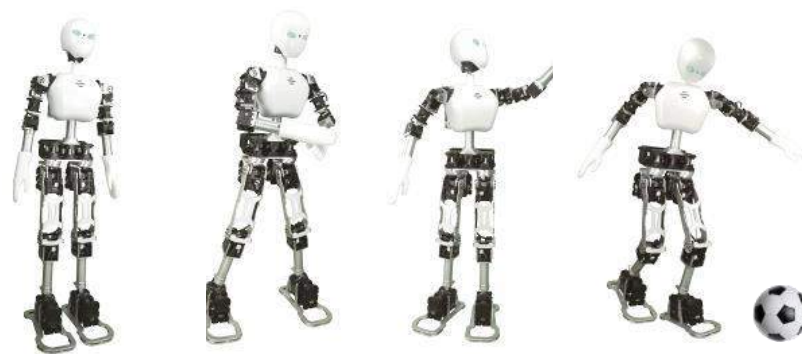
ROBOBUILDER

UXA-90 Light

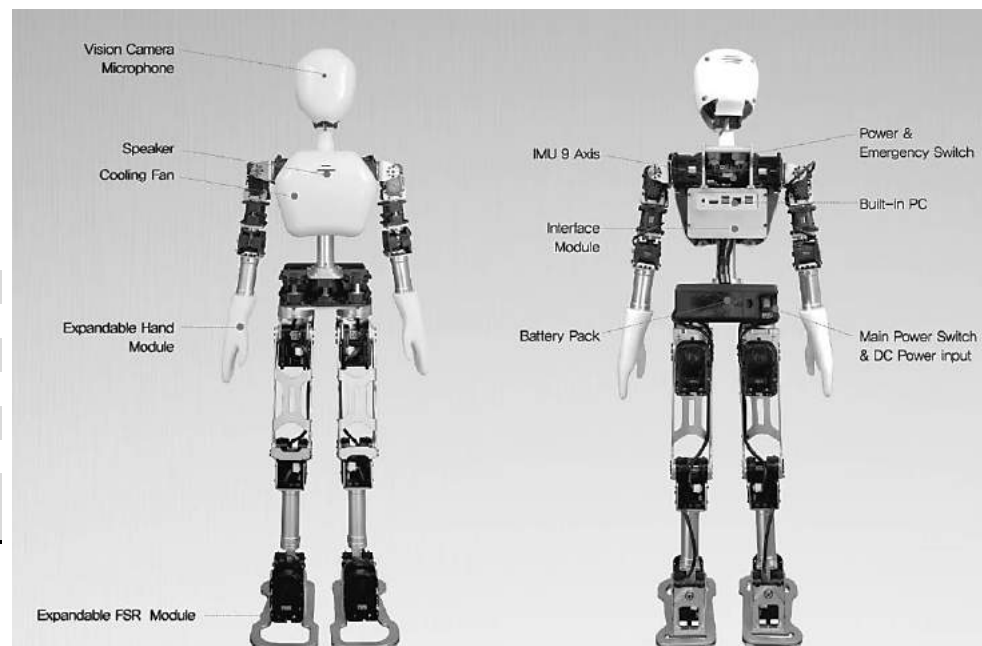
Multipurpose Humanoid Robot

-An open-source robot platform for various research & development.

-Supports Linux (ROS) & C#



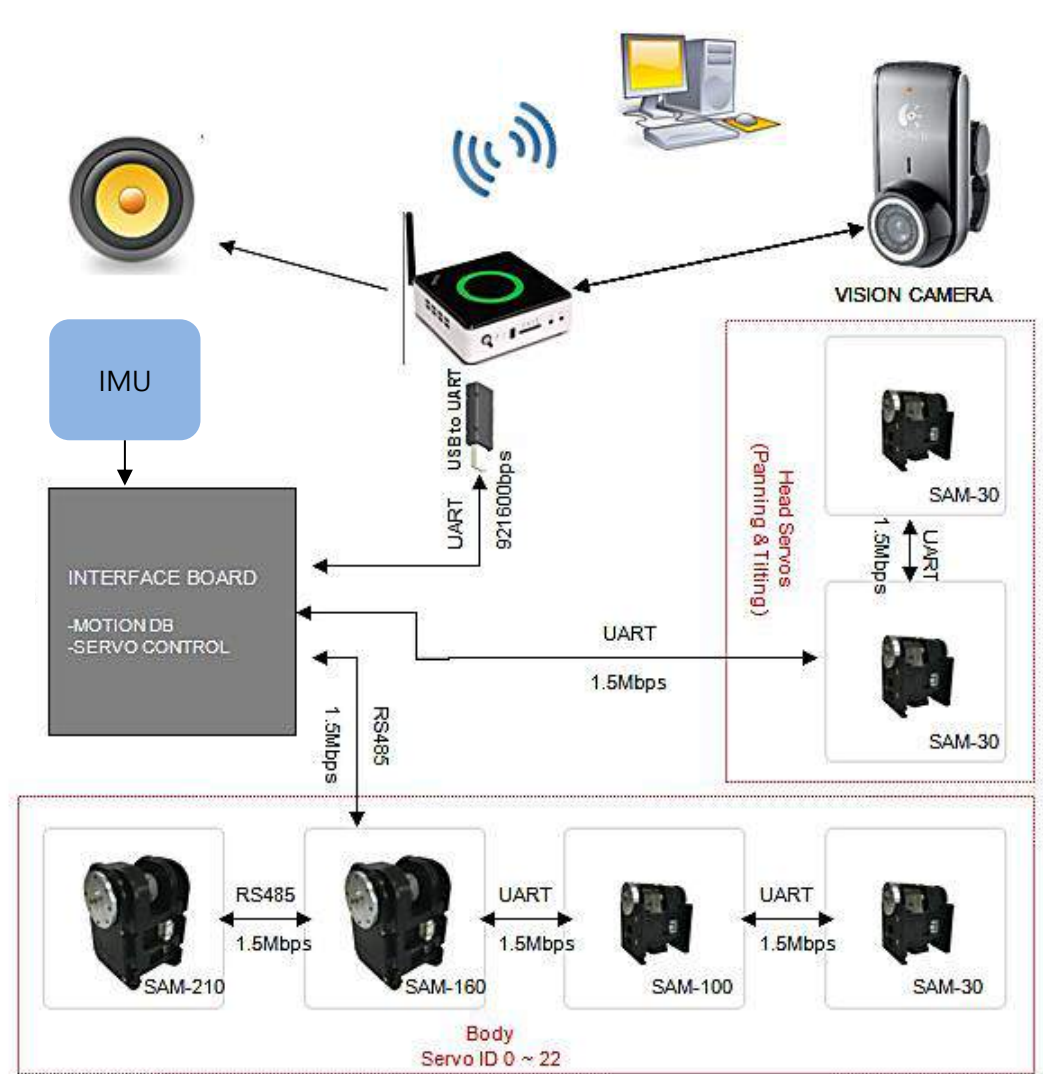
Name	UXA-90 Light
Weight	9.5kg
Height	100cm
Width	35cm
Walking speed	30cm/sec
DOF(Degree of Freedom)	23 DOF 12 DOF for legs 8 DOF for arms 1 DOF for waist 2 DOF for head
Sensor	IMU 2G 9Axis, $\pm 180^\circ$ (Roll/Yaw), $\pm 90^\circ$ (Pitch)
Computer	AMD E2-1800 Processor dual-core 1.7GHz 2GB DDR RAM 64GB(SSD)
Wireless	802.11 b/g/n
External interface	USB2.0 x 2, Ethernet 10/100/1000 Base T USB 3.0 x 2, HDMI x 1
Speaker	1ea
Microphone	1ea
Vision Camera	Logitech C905/HD 1600x1200 pixel
Battery	Lithium Polymer 18.5V, 2250mA
Operation hour	20min ~ 40min
Charging time	30min
O/S	Windows7 Linux Ubuntu 14.04



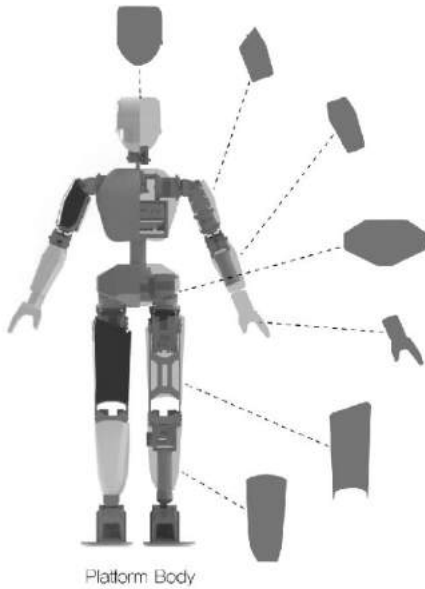
Components of UXA-90



ID	Servo Type
0	SAM-210P
1	SAM-210P
2	SAM-210P
3	SAM-210P
4	SAM-210P
5	SAM-210P
6	SAM-210P
7	SAM-210P
8	SAM-210P
9	SAM-210P
10	SAM-160P
11	SAM-160P
12	SAM-100
13	SAM-100
14	SAM-100
15	SAM-100
16	SAM-30
17	SAM-30
18	SAM-30
19	SAM-30
20	SAM-30
21	SAM-30
22	SAM-160P
23	SAM-30
24	SAM-30



- IMU Sensor: 9 axis
- Operation hour(Battery): 40min Approx.
- O/S: Windows, Linux, Android



Provide pre-designed STEP files for exterior and base frame:
 Users can create new appearance with 3D printer.
 STEP files includes details to assemble such as size, position of devices, bolt and nuts.

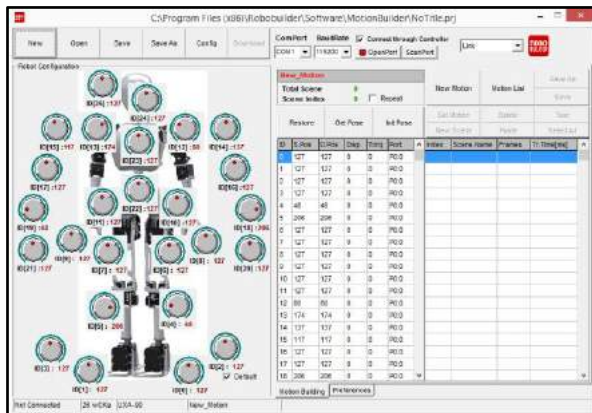
Visual C# source code for tracking an object with vision processing.
 Management S/W:
 -SAM programmer: Manage servo motors.
 -Motion builder: Create robot's new behavior.



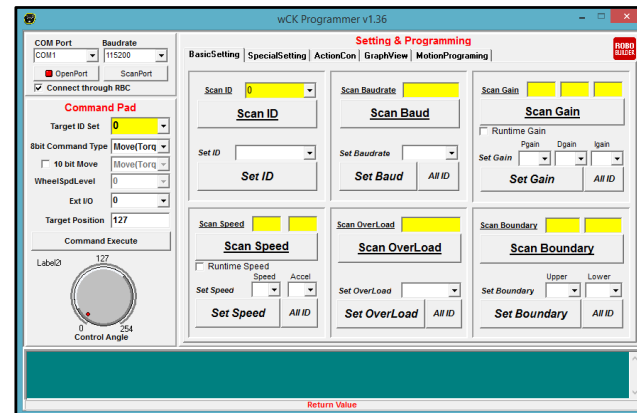
R.O.S-based framework.
 Provides R.O.S guide book and source codes.

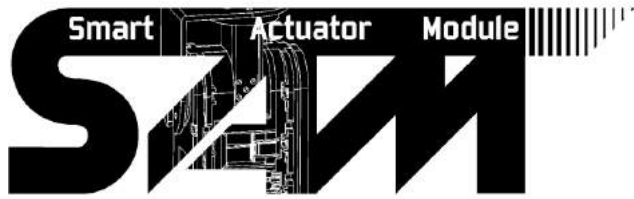
Management Software

Motion Builder S/W: Create and manage robot's behaviors



SAM Programmer: Control and manage servo motors





Smart Actuator Module for UXA-90

Double shaft system

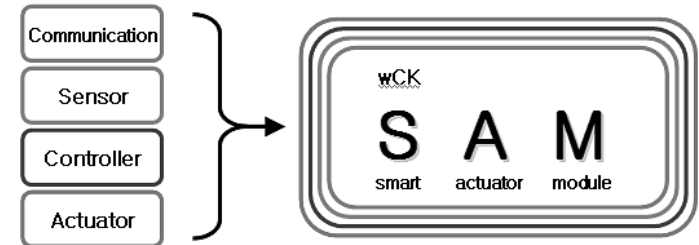
Double shaft system makes superior design and allows various connection methods.

Self-running motion (patented)

All S.A.M series is capable of running without any additional controllers.

External I/O port (patented)

Build-in I/O port makes easier expansion of peripheral devices.



Model	SAM-3A
Max torque(kgf.Cm)	3 at 10V/1A
Max speed(rpm)	80
Gear material	Plastic & Metal
Resolution(degree)	0.32°
Network Interface	UART Serial (Multi drop TTL duplex)
Operation Voltage(V)	4~12
Position Sensor	POT(330°)

Model	SAM-30
Max Torque(kgf.Cm)	28 at 19V/2A
Max speed(rpm)	90
Gear material	Metal
Resolution(degree)	1.08° (Quick mode) 0.083° (Standard mode)
Network Interface	UART Serial (Multi drop TTL full duplex)
Operation voltage(V)	14~24
Position sensor	POT(340°)

Model	SAM-100P
Max Torque(kgf.Cm)	100 at 24V/5A
Max speed(rpm)	65
Gear material	Metal
Resolution(degree)	1.08° (Quick mode) 0.083° (Standard mode)
Network Interface	RS-485 Half duplex / UART Serial (Multi drop TTL full duplex)
Operation voltage(V)	14~24
Position sensor	Optical Enc(358°) + POT(340°)



Model	SAM-160P
Max Torque(kgf.Cm)	160 at 24V/5A
Max speed(rpm)	40
Gear material	Metal
Resolution(degree)	1.08° (Quick mode) 0.083° (Standard mode)
Network Interface	RS-485 Half duplex / UART Serial (Multi drop TTL full duplex)
Operation voltage(V)	14~24
Position sensor	Optical Enc(358°) + POT(340°)

Model	SAM-210P
Max Torque(kgf.Cm)	210 at 24V/5A
Max speed(rpm)	30
Gear material	Metal
Resolution(degree)	1.08° (Quick mode) 0.083° (Standard mode)
Network Interface	RS-485 Half duplex / UART Serial (Multi drop TTL full duplex)
Operation voltage(V)	14~24
Position sensor	Optical Enc(358°) + POT(340°)

