>>Intelligent Robot

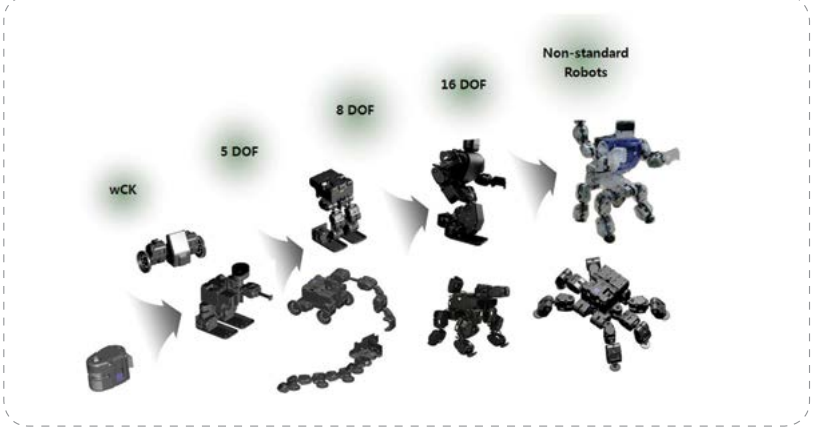
Bipedal walking type MSRDS robot training equipment

HBE-RoboBuilder-MSRDS

- DIY platform based on graphic programming language for robot education
- Learning VPL programming of MSRDS via biped robot
- Practice of creative robot production using block robot module
- It is an assembly structure of insertion type of joint. So it is easy to disassemble and assemble robot
- Various motion control exercises using acceleration sensor and Bluetooth module
- Robot action file Activate community through internet sharing
- Optimal platform for robot activity and robot competitio

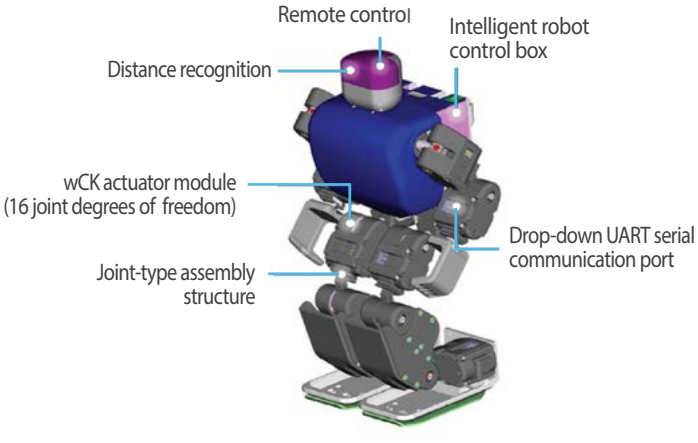
Features

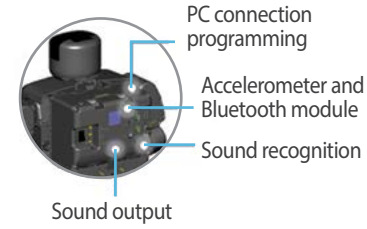
- HBE-RoboBuilder-MSRDS is a DIY platform with rich robot education contents and amusement for motivation. By using the block robot module, you can create various types of robots with your own creative ideas.
- It is easy to assemble and disassemble because the connecting device of the block is of the international patented joint insertion type.
- The acceleration sensor, the volume sensor, and the distance sensor are equipped, and can practice the robot motion control in various environments.
- A block type robot module (wCK) is equipped with a Micom with a built-in PID controller to perform precise motion control.
- Multi-drop type Full Duplex UART serial communication capable of connecting 254 block type robot modules (wCK) in parallel is supported.
- Intuitive robotic file creation software such as motion builder and action builder.
- wCK is equipped with an LED to create a colorful robotic action, the robot files can be shared over the Internet.



Configuration and Name

HBE-RoboBuilder-MSRDS provides the joint structure that can access various robots using the robot module (wCK) and provides the software to program all the robots accordingly.
In addition, it can be easily assembled with a screwdriver because it is made of a joint-type structure that can easily make a robot. Robot parts are made of high-strength plastic material so that parts are not worn even if assembled many times.





[Assembly structure of joint insertion type]

Hardware Specifications

Item	Specifications
wCK Actuators (Block Type Robot Module)	All Metal Gear 1108K : 12EA All Metal Gear 1111K : 4EA
Robot Projects	Transparent 16 Actuator : Huno, Dino, Dogy
Bluetooth Included	Real-time RS232C communication 1:1. 99% send/receive within 10M of open space
PSD Sensor	Distance measuring range : 10 to 50cm
Sound Sensor	Sound size sensing
Voice Output	Speaker
Connector Pieces	71
Robot Case Color	Transparent
Internal LEDs	Red and Green Color LED
Remocon Type	IR
Internal Motion List	40
Accelerometer	3-Axis Accelerometer Sensor

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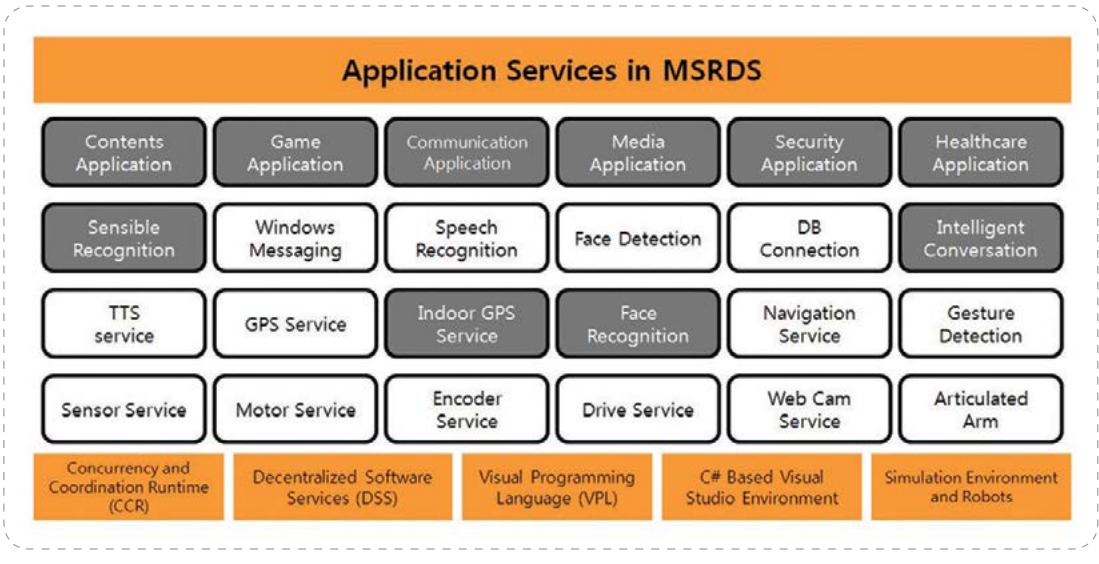
MSRDS

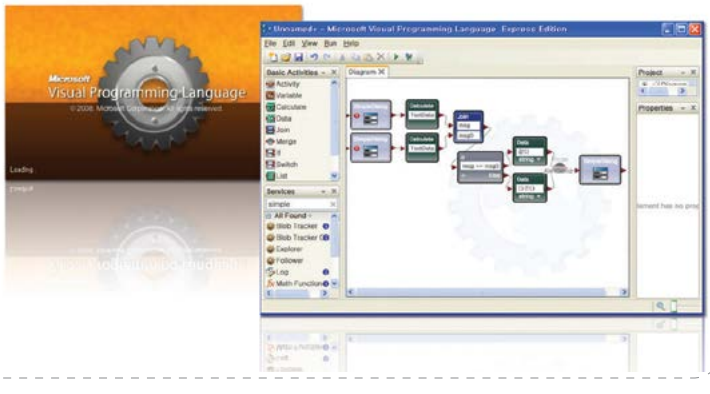
MSRDS is a development tool and environment that can help you develop a variety of applications for various robotic hardware if you have a basic knowledge of programming.

- Provides development environment and tool integrated with existing Visual Studio
- UI-based development environment such as VPL (Visual Programming Language)
- Provides simulation tools and a common message schema
- Providing mechanism for concurrency processing
- Provides support environments such as various samples and tutorials



VPL

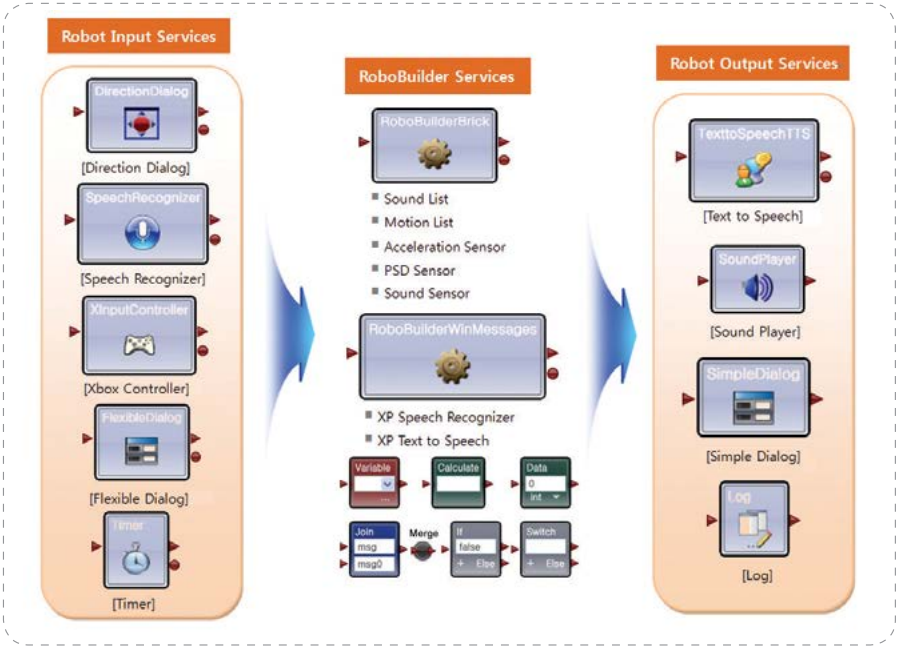
VPL (Visual Programming Language) is very useful for beginners who are studying basic concepts such as variable and logic of program language using easy-to-understand graphics language, advanced programmers who need rapid prototyping or code development for application development It is useful. Although the Toolbox in VPL (Visual Programming Language) is tailored to robot application development, the underlying structure is not limited to robot programming, but can be applied to other applications. As a result, Visual Programming Language (VPL) is widely used by students, enthusiasts, web developers, and professional programmers.



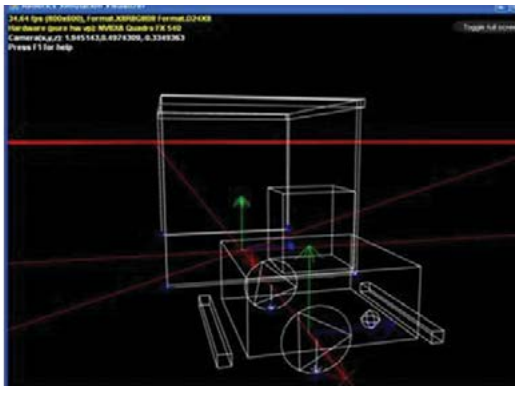
VPL program example

MSRDS structure

You can create a variety of applications using services such as interface service, output service provided by MSRDS, sensor, motion of HBE-RoboBuilder-MSRDS.



Simulation environment



- It is based on Ageia's PhysX engine and the Microsoft XNA framework.
- Software robots that operate the same as hardware robots can be developed on the simulator.
- It can significantly reduce the time and cost of robot development, and can greatly improve the productivity and code quality of development results.
- It can be applied to various types of specialized algorithms research such as study of robot driving algorithm only by configuring a separate simulation environment with hardware robot.
- It is supported by Microsoft to enable specialized development for algorithms and intelligent services.

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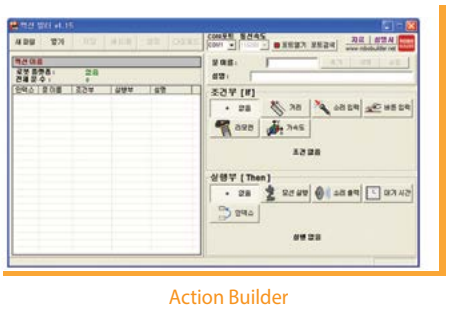
Experimental environment

HBE-RoboBuilder-MSRDS uses VPL, a graphical programming language, to provide a variety of educational topics related to various peripherals and sensors of robots.

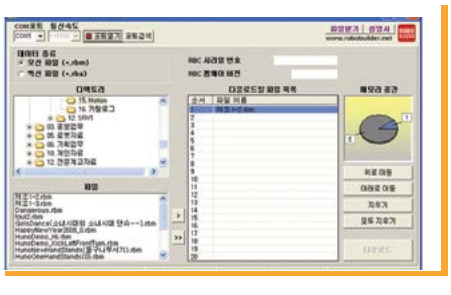
Application software

It provides various software such as downloading motion builder and action builder through downloader, self diagnosis which can check the abnormality of robot.

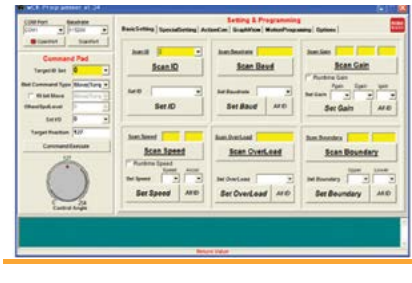
Motion Builder



Action Builder



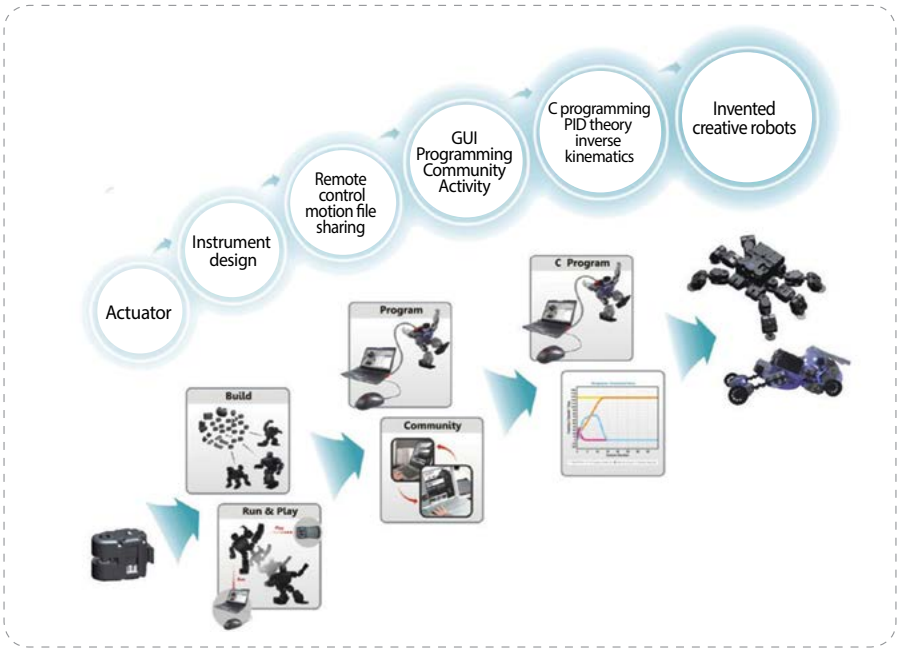
Download Tool



Robot Module(wCK) Programmer

Step-by-step learning

HBE-RoboBuilder-MSRDS is designed to enable learning from basic actuators to creative robots.



Training content

Subject	Contents
	RoboBuilder user tutorial using Visual Program language (VPL) of Microsoft Robotics Studio (MSRDS) 1. What is a robot? 2. Introduction to RoboBuilder 3. Introducing Microsoft Robotics Developer Studio (MSRDS) 4. Hardware Installation and Setup 5. Downloading and installing the software 6. VPL environment of MSRDS 7. Basic Activities 8. Programming VPL services in MDRDS 9. Programming RoboBuilder Services with VPL 10. RoboBuilder Application Programming

Product Components


HBE-RoboBuilder-MSRDS


User Manual /Product CD


Remote control


Power cable


Adapter (12V / 5A)


Serial cable