

ROBOBUILDER – MSRDS KIT



Microsoft
Visual Programming Language
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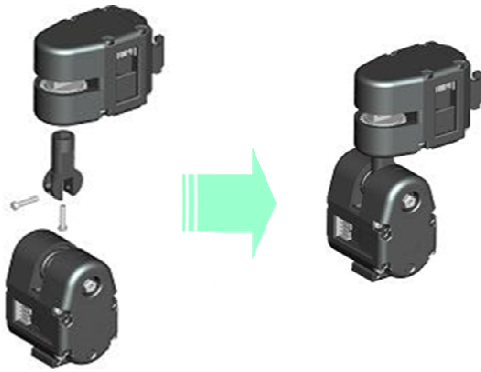
Intelligent Humanoid Robot

for MSRDS VPL Education

- ❑ Graphic Programming Language Based DIY Platform for Robot Education
- ❑ MSRDS VPL Programming Practical Study with Biped Robot
- ❑ Creative Robot Building by using block style modules
- ❑ Various Motion Control through Acceleration sensor or Bluetooth module
- ❑ Sharing Robot Motion/Action file via Internet
- ❑ Optimized Robot Platform for Robot Study Groups, or Robot Competitions

RoboBuilder-MSRDS Kit Features

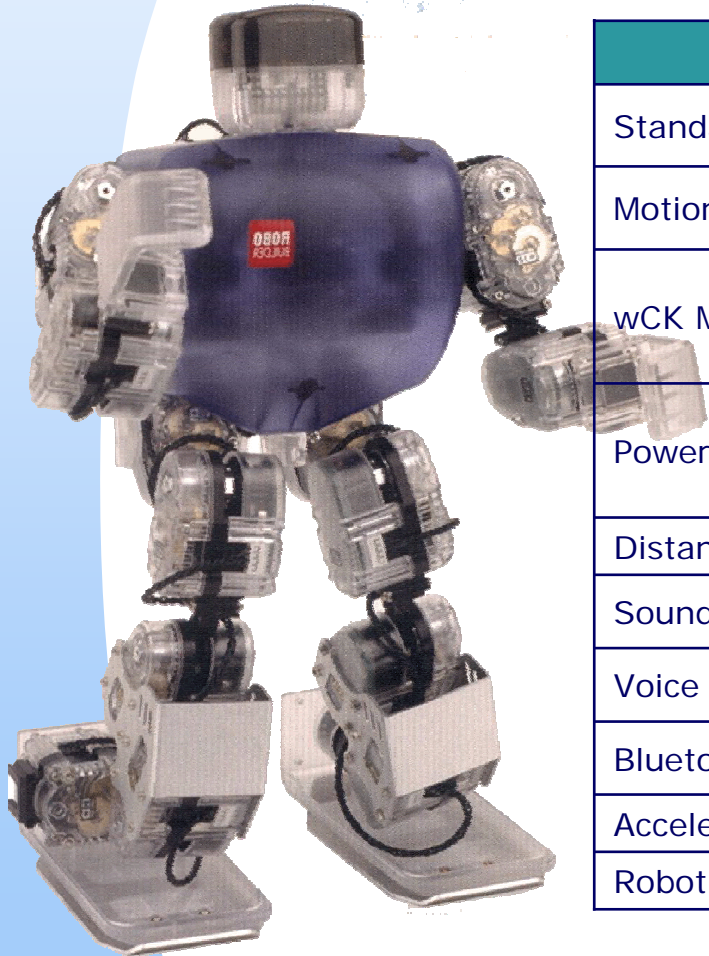
- **DIY Platform for Robot Education and Entertainment**
- **Block type Robot module Connection (Joint-Insert) Patented**
- **Precise Motion Control - PID Control Micom Built-in Robot module (wCK actuator)**
- **Support Full Duplex UART Serial Communication**
- **Two Color Internal LED in Robot module (wCK actuator) for nice Robot Motions**
- **User-Friendly GUI Software and Intuitive/Logical Programming**



Main Components

Component	Picture
RBK-CREATOR5720T-S03	
- Full Metal Gear applied 16 wCK modules	
- Acceleration Sensor Built-in RBC Box	
- Bluetooth module Built-in RBC Box	
Web Cam	
Headset Microphone	
Game Controller	
Bluetooth Dongle for PC	
MSRDS Tutorial	
Metal-Plastic Box	

Kit Specification

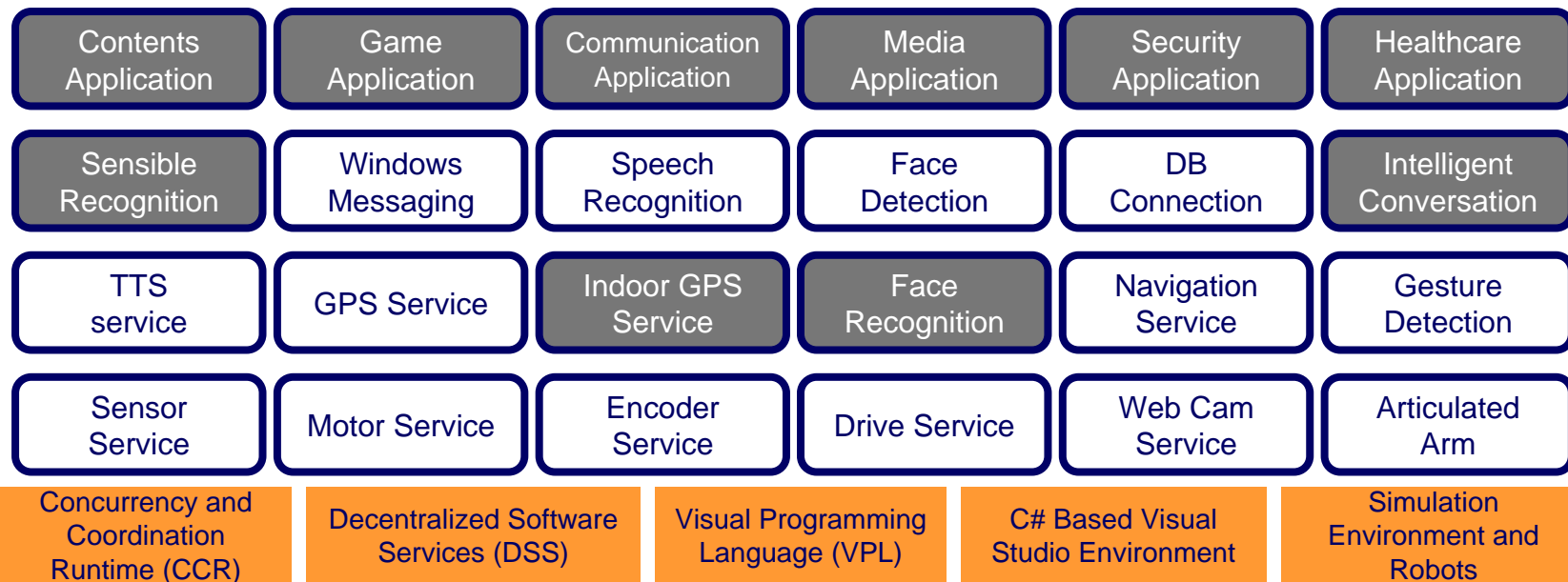


Item	Description
Standard Platform	HUNO, DOGY, DINO
Motion	Various HUNO Motion Pre-Programmed
wCK Module Nos.	wCK-1108T2 (8kg.cm) - 12 Modules wCK-1111T2(11kg.cm) – 4 Modules (Full Metal Gear wCK module version)
Power	Battery : 8.4V Ni-MH 20~30 min. (Continuously) Power Adapter : 12V
Distance Sensor	Object/Distance Recognition
Sound Sensor	Sound Recognition
Voice Output	25 Built-in Sounds
Bluetooth included	Bluetooth module Built-In RBC Box
Acceleration Sensor	Acceleration Sensor Built-In RBC Box
Robot Case	Transparent (Engineering Plastic)

MSRDS (Microsoft Robotics Developer Studio)

- Provided Integrated Development Environment and Tool with the existed Visual Studio
- Provided GUI Based – Visual Programming Language
- Provided Simulation Tool and Common Message Schema
- Provided Various Sample and Tutorial

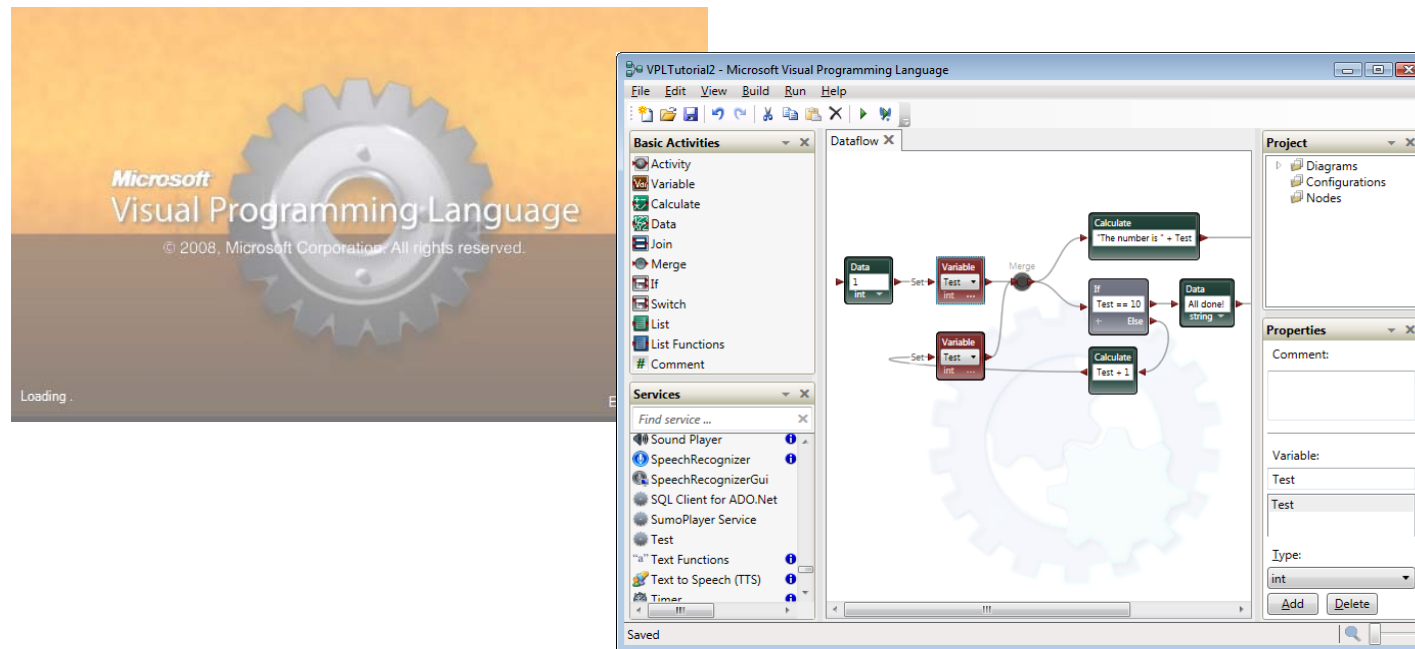
Application Services in MSRS



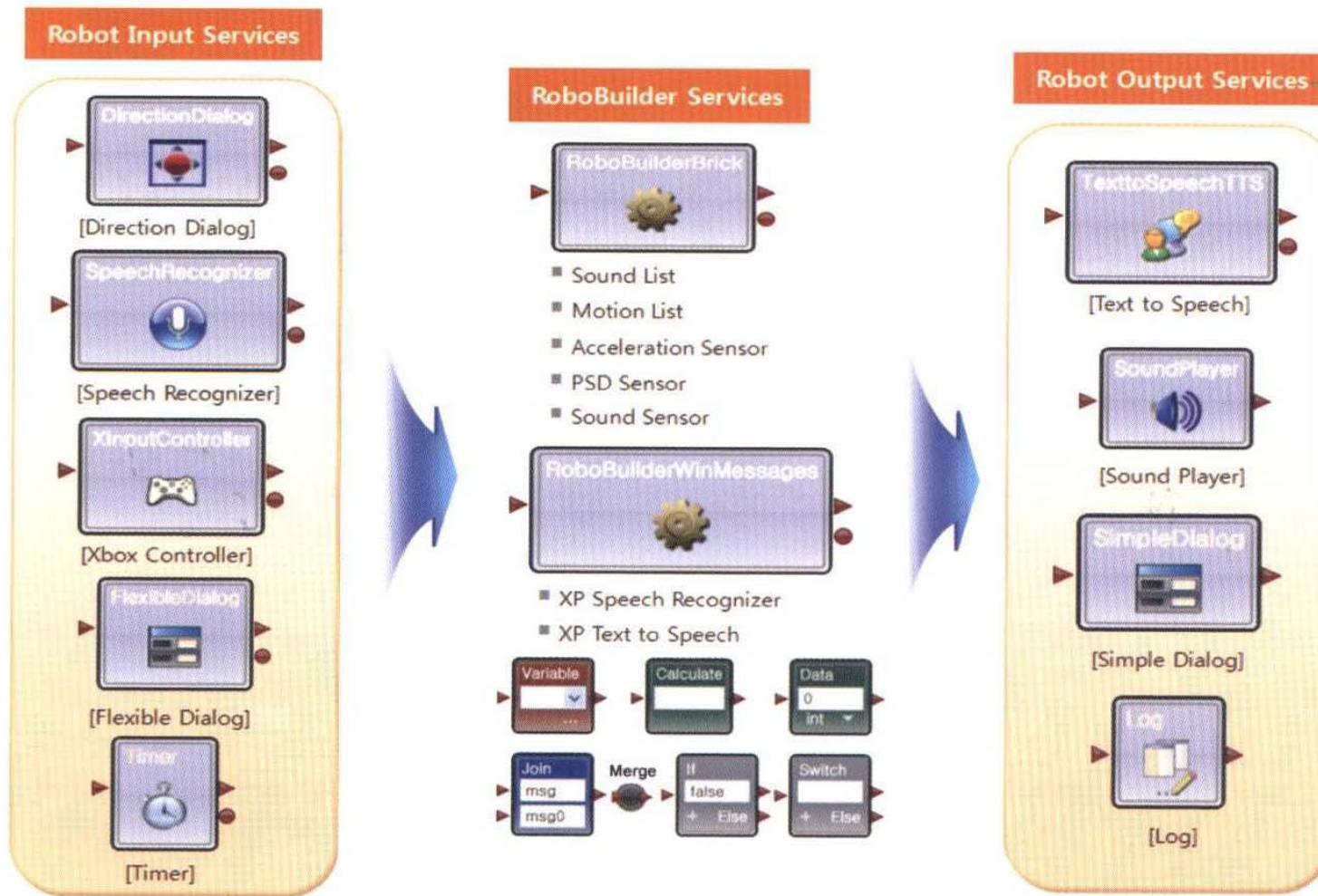
VPL (Visual Programming Language)

VPL is targeted for beginner programmers with a basic understanding of concepts like variables and logic. However, VPL is not limited to novices.

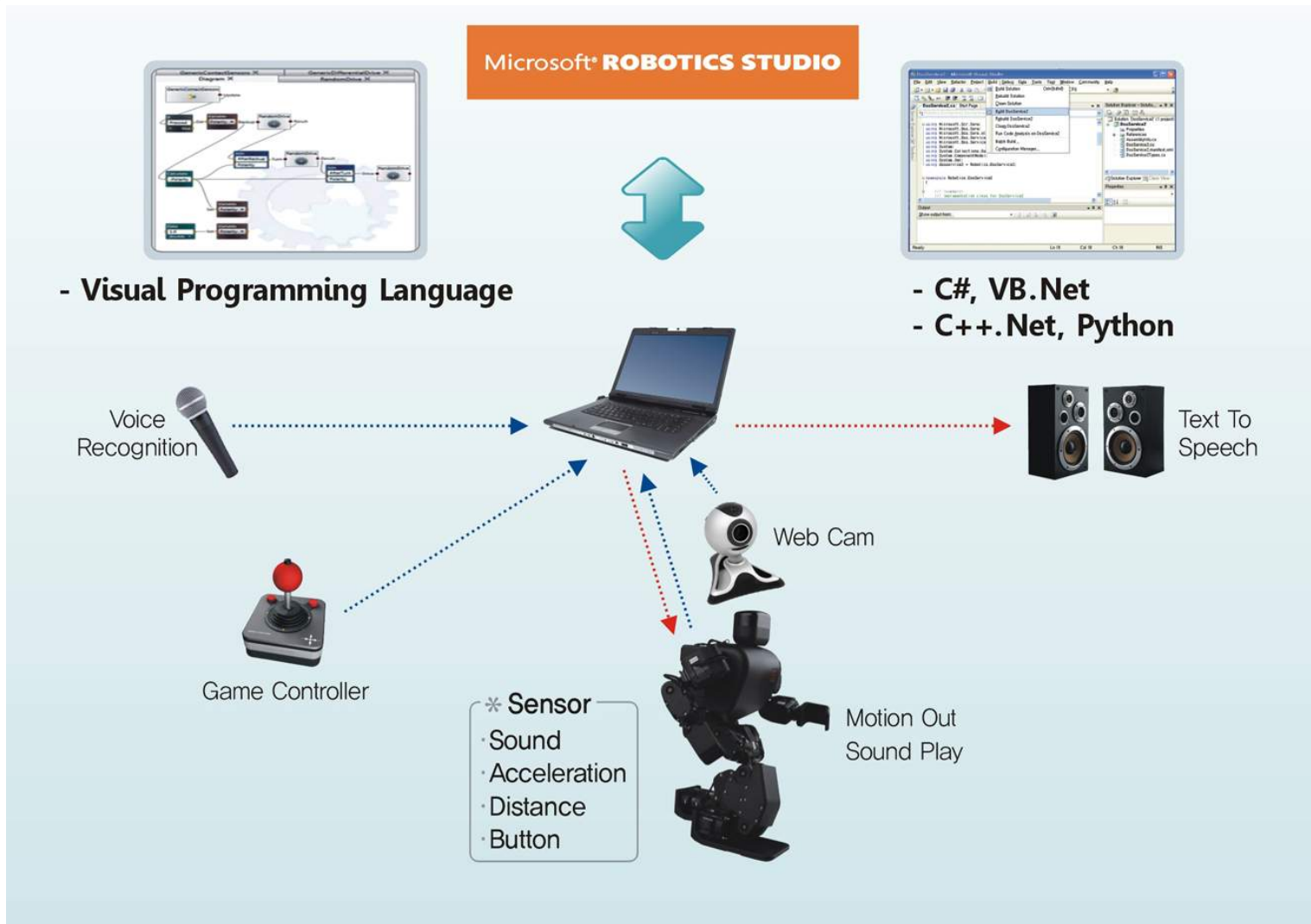
The programming language may appeal to more advanced programmers for rapid prototyping or code development. As a result, VPL may appeal to a wide audience of users including students, enthusiasts/hobbyists, as well as possibly web developers and professional programmers.



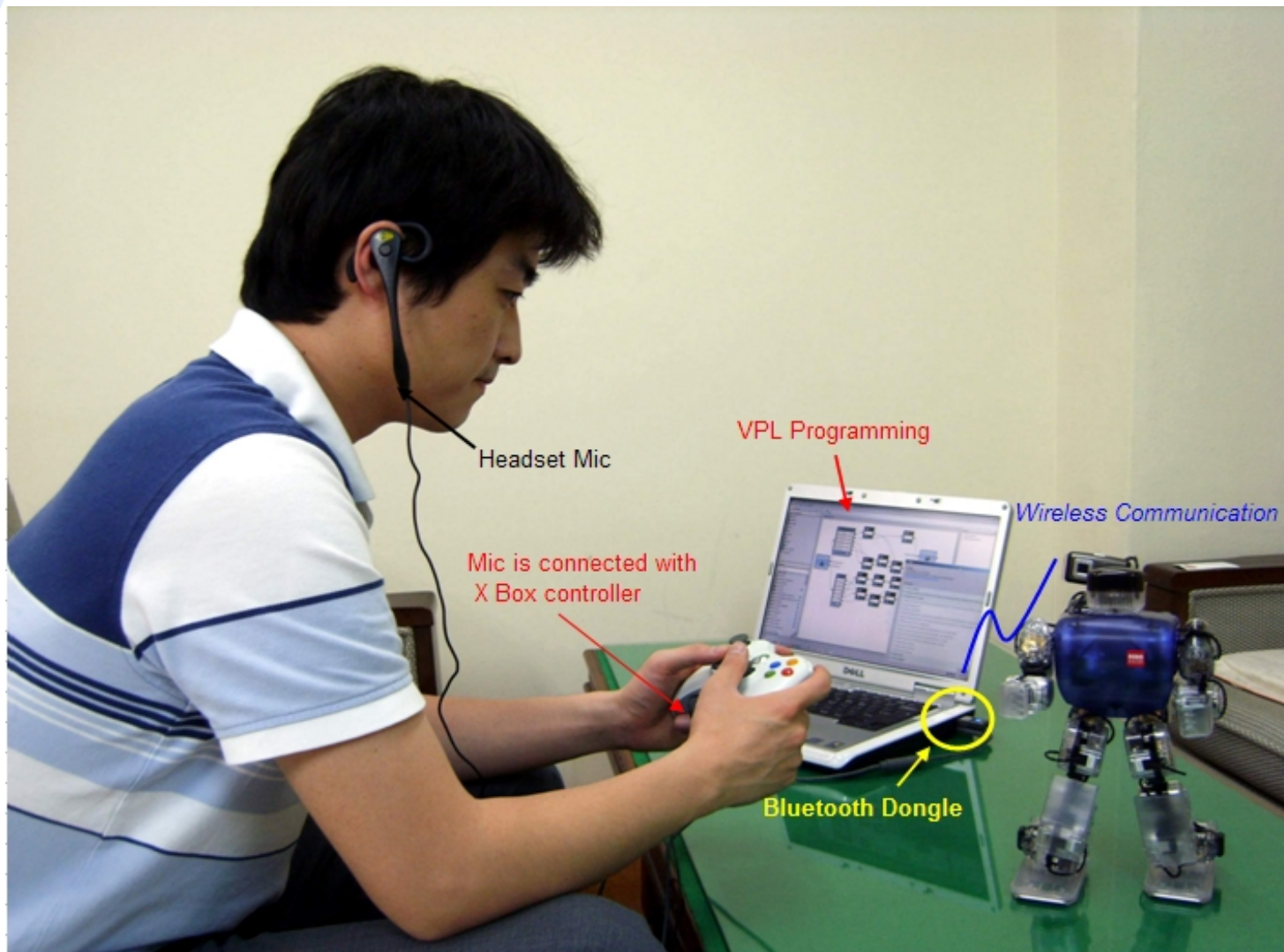
RoboBuilder - MSRDS Service Structure



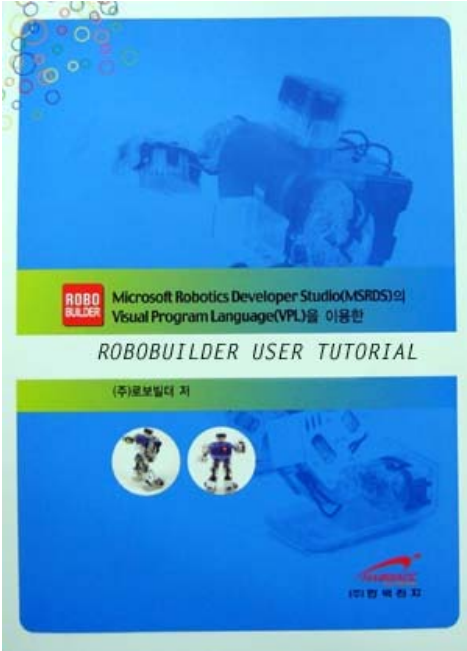
MSRDS Based Environment



MSRDS Kit Demonstration



Teaching Materials & Curriculum

Text Book	Curriculum
	<ol style="list-style-type: none">1. What is Robot?2. RoboBuilder Introduction3. MSRDS Introduction4. Hardware Installation & Configuration5. Software Installation & Configuration6. MSRDS VPL usage Environment7. Basic Activities8. MSRDS VPL Service Programming9. RoboBuilder – VPL Service Programming10. RoboBuilder Application Programming11. Appendix

Main Chapter Structure

8. MSRDS-VPL Service Programming	A. Service Configuration
	B. Utility Service
9. RoboBuilder Service Programming	A. Using RoboBuilder Sensors
	B. Play Motions and Sounds
	C. RoboBuilder Interface Service
	D. Speech Recognizer Service
10. RoboBuilder Application Programming	A. Get Up If Falls Down
	B. Moving in accordance with Distance
	C. Create Continuous Motion