

## RSS-I Glossary and Acronyms

**Carmen:** The Carnegie Mellon Robot Navigation Toolkit is an open-source collection of software for mobile robot control implemented in C. Its programs control the movement of the robot and accept inputs from the sensors plus handle more sophisticated tasks like mapping, navigation and localization. Carmen also includes a simulator. An update of Carmen has been developed for RSS and will later be released. For more information see: <http://www-2.cs.cmu.edu/~carmen/>

**Daemon:** [From whatis.com] A daemon (pronounced DEE-muhn) is a program that runs continuously and exists for the purpose of handling periodic service requests that a computer system expects to receive. The daemon program forwards the requests to other programs (or processes) as appropriate.

**DIP:** Dual Inline Package. "Dual inline" refers to two parallel sets of pins. DIP packaging is the standard packaging used for most regular integrated circuits.

**Driver:** [From whatis.com] A driver is a program that interacts with a particular device or special (frequently optional) kind of software. The driver contains the special knowledge of the device or special software interface that programs using the driver do not.

**Ethernet protocol:** A very common method of networking computers in a local area network involving bridges, routers and even switches. Ethernet will handle about a Giga-bit of data per second and can be used with almost any kind of computer.

For more see: <http://computer.howstuffworks.com/ethernet.htm>

**GUI:** Graphical User Interface

**IDE:** Integrated Development Environment

**ORCboard:** ORC = "Our Robot Controller", The "OrcBoard" robotics interface board was designed and manufactured for the MASLab staff and is an evolved version from previous year's competitions. It contains an extensive list of capabilities, including

- Four high current motor drivers with dedicated motor enables and current sense.
- I2C expn port (400kbps)
- 12+ run-time reconfigurable digital IO ports (sonar, quad-phase, current-sensed servos, bump sensors, etc...)
- 8+ analog ports
- OrcPad connector (and of course, an OrcPad)
- A "brain board" attachment header, allowing easy integration of a tiny microcontroller rather than a mongo MASLab computer.
- Size: 3.5" x 4.5".

In addition, the board has about 25 MIPS of CPU power built-in, allowing additional features such as programmable low-pass filters on the A/D ports and programmable current limiting of motor ports.

**ORCPad:** The OrcPad is a detachable accessory for the OrcBoard which provides human interface elements including buttons, a joystick, and a graphical 128x64 pixel display. The OrcPad was also designed and manufactured by the MASLab staff.

**PSOC:** Programmable System on a Chip

**PCB:** Printed Circuit Board. See <http://www.lvr.com/pcbs.htm> for more information.

**RS-232:** RS-232 is a serial communications standard that provides asynchronous communication capabilities, such as hardware flow control, software flow control, and parity check. It has been widely used for decades. Almost all gears, instruments with digital control interface, and communications devices are equipped with the RS-232 interface. The typical transmission speed of an RS-232 connection is 9600 bps over a maximum distance of 15 meters. From [www.moxa.com/services/glossary.htm](http://www.moxa.com/services/glossary.htm)

**Serial protocol:** A communication standard where information is sent one at a time as opposed to in parallel.

**TCP-IP:** [from [whatis.com](http://whatis.com)] TCP/IP (Transmission Control Protocol/Internet Protocol) is the basic communication language or [protocol](#) of the [Internet](#). It can also be used as a communications protocol in a private network (either an [intranet](#) or an [extranet](#)).

TCP/IP is a two-layer program. The higher [layer](#), [Transmission Control Protocol](#), manages the assembling of a message or file into smaller [packets](#) that are transmitted over the Internet and received by a TCP layer that reassembles the packets into the original message. The lower layer, [Internet Protocol](#), handles the [address](#) part of each packet so that it gets to the right destination. Each [gateway](#) computer on the network checks this address to see where to forward the message. Even though some packets from the same message are routed differently than others, they'll be reassembled at the destination.

**USB:** is an abbreviation of Universal Serial Bus. USB is a standard port that enables you to connect external devices (such as digital cameras,

scanners, and mice) to personal computers. The USB standard supports data transfer rates of 12Mbps (million bits per second), a vast improvement over the serial port standard it is beginning to replace. Aside from speed advantages, USB devices can be connected or disconnected without the need to restart the computer.