

Robotic Unicycle

Mark Mellors & Andrew Lamb
8th November 2004

www.roboticunicycle.info

Budget

The maximum allocated budget from the Cambridge University Engineering Department (CUED) is £100 per student, giving £200 for the Robotic Unicycle. As expected, the project has now consumed this allowance and there is limited extra funding available from the Engineering Department.

Expenditure

The table below lists the total expenditure to date, which includes most of the mechanical and structural components for the project.

<u>Component</u>	<u>Supplier</u>	<u>Cost</u>
Wheel	Thakes cycles	£18.98
Motor	Technobots	£26.95
Gears	Technobots	£36.33
Bearings	RS Components	£27.75
Pulley & Belt	RS Components	£10.18
Materials	CUED Stores	?
USB Control Board	Alpha Microsystems	£53.57
USB Adapter	Martley Electronics	£4.99
Books	Maplins	£7.99
ADC x1	Farnell-in-one	£2.70
IR range finder x1	Farnell-in-one	£12.96
Tilt Switches	Maplins	£1.49
Workshop charges	CUED	?
<u>Total at 8/11/4:</u>		£203.89 + ?

Planned Expenditure

There remains a substantial number of components that are required for the Robotic Unicycle, mainly for the system electronics and control. The table below attempts to list these components but there may be changes to the plan as the project develops. An approximate date on which the components will be needed has also been shown to allow for some financial planning.

<u>Component</u>	<u>Supplier</u>	<u>Cost</u>	<u>Expected date</u>
<i>Mechanics Subsystem</i>			
Motor	Technobots	£26.95	January 2005
Gears	Technobots	£36.33	January 2005
Bearings	RS Components	£27.75	January 2005
Materials	CUED Stores	?	Ongoing
Workshop Charges	CUED	?	Ongoing
Outer panels	Carbon Concepts	£100	December 2004
<i>Electronics Subsystem</i>			
IR range finders x3	Farnell-in-one	£38.88	December 2004
Gyro low pass filters x3	Farnell-in-one	£10	November 2004
IR detectors x4	Farnell-in-one	£11	November 2004
Radio Controller	Technobots	£40	November 2004
Magnetic Compass	Active Robots	£26.97	February 2004
Sensor Interface	Farnell-in-one	£5	November 2004
Speed controllers x2	Technobots	£80	November 2004
Power management	Farnell-in-one	£30	December 2004
Battery charger	Farnell-in-one	£25	December 2004
Battery	Technobots	£30	November 2004
<i>Control Subsystem</i>			
Computer controller		£250	November 2004
<i>Project Costs</i>			
Competition entries		£50	June 2005
Travel to competitions		£100	June 2005

Approximate total future expenditure: £887.88

Compared to robots of a similar weight, the Robotic Unicycle represents very good value for money.

Sponsorship

The Robotic Unicycle project is seeking sponsorship of the order of £1,000 to continue its success. In return for such sponsorship, the name of the sponsor can be printed onto the unicycle and receive prominent identification on the project website. Help in kind donations of components or equipment will be highlighted by demonstration of the equipment in use. Any prizes from competitions, however, will not be used to refund sponsors.