Student Robotics Risk Assessment Form

May 14, 2016

Activity being assessed: Student Robotics Activity in Schools (for academic year 2013 - 2014)

Persons at risk: Competitors, Team Leaders, Blueshirts

Assessor's name: Andrew Busse

Responsible Persons: Rich Barlow (SC - Engineering); Team Leaders

Date of assessment:

1 Risks

The following risks have been considered for the Student Robotics activity in schools. Further description of the meaning of risk ratings (presented in this section as $L \times S$) can be found in the next section.

Hazard	Control Measures	Responsible Person	Risk Rating	
Injury while using power or manual tools	Control Measures to be decided by each institution. Team Leader must inform Blueshirts of local rules (NB Blueshirts are not expected to enforce institution rules)	Team Leader	3	
Interaction with robots: electric shock, minor injury	No exposed voltages above ELV (120V DC, 50V AC) present on any boards, no stored energy above 5J	SC - Engineering	2	
	All electronic boards undergo a full system check before delivery, and are delivered in suitably robust cases designed to contain component failures	SC - Engineering		
	Documentation related to kit usage (at https://www.studentrobotics.org/docs) must be clear, up to date, and reviewed once per year	SC - Engineering		
	Boards must remain in their cases.	Team Leader		
	Wiring to be inspected before robots switched on: Polarities are correct, no exposed / frayed wire strands, colour coding is respected, wiring is kept tidy	Team Leader		
	Robots to be inspected for mechanical robustness before switched on - kit is securely mounted to the frame and minimal risk of damage to battery/kit from impacts, frame is secure, power switch is accessible	Team Leader		
Misuse of batteries	Charging to be performed in the exact manner described in https://www.studentrobotics.org/docs/kit/batteries.	Team Leader	4	
	Chargers and batteries tested, charging	SC - Engineering		

2 Assessment Guidance

The risk ratings of the risks in the previous section are calculated by multiplying L, the likelihood rating, by S, the severity rating.

Likelihood	Likelihood rating
Very unlikely	1
Unlikely	2
Likely	3
Fairly likely	4
Very likely	5

Severity	Severity rating
First Aid injury/illness	1
Minor injury/illness	2
'3 day' injury/illness	3
Major injury/illness	4
Fatality/disabling injury	5

The following should be used to rate the risk and plan corrective action:

Risk Rating	Category	Tolerability	Comments
1–2	Very Low	Acceptable	No further action is necessary other than to ensure that the controls are maintained.
3–4	Low	Acceptable	No additional controls are required unless they can be implemented at very low cost (in terms of time, money and effort).
5–7	Medium	Tolerable	Consideration should be given as to whether the risks can be lowered, where applicable, to a tolerable level, and preferably acceptable level, but the costs of additional risk reduction measures should be taken into account. The risk reduction measures should be implemented within a defined time period.
8–14	High	Tolerable	Substantial efforts should be made to reduce the risk. Risk reduction measures should be implemented urgently within a defined time period and it might be necessary to consider suspending or restricting the activity, or to apply interim risk control measures, until this has been completed. Considerable resources might have to be allocated to additional control measures.
15 and above	Very High	Unacceptable	Substantial improvements in risk control are necessary, so that risk is reduced to a tolerable or acceptable level.