Performance Score Sheet

Team Name:…… **Country:** …… **Primary/Secondary**

Assessors Name:……

Category	Examples of how high marks may be achieved are:	Mark
Entertainment value	• Non-repetitive robot movements and/or a varied robot performance • There is a link, or common theme demonstrated by the whole performance • A digital display that integrates and/or complements the performance • A performance that is engaging throughout • Ambitious use of the stage area • Robot movement(s) are choreographed tightly to the music Only robots and two performers are allowed on stage. No props or scenery are allowed on the stage	/8
Innovation & Originality	• Robots are home-built, not kits • Technologies are used in new or different ways not seen before • Unusual technologies are used – for example unusual mechanical, electronic or power systems	/8
Quality of Display	• Reliable robots that do not fall apart and work as expected for the duration of the performance • Home-built robot costumes complement the performance and are engaging • A slick and polished performance throughout the display	/8
Technical Complexity	• Robot movement around the whole stage area • Synchronization and/or communication between robots • Risky movements by robots • Interaction between digital display and the robots	/8
Sensor & Interactions	• Sensors that "add value" to the performance • Sensors are used in 'original' or different ways • Communication between robots to develop the performance • Human-robot interaction (not remote control) • Robot-robot interaction • Use of coloured markers (Secondary only) Primary: The use of line tracking robots on mats will NOT be rewarded highly Secondary: No lines or mats are allowed on the stage	/8
Deductions	• Each unplanned human intervention: -3 • Restarts: -3 for each re-start • Allotted time: -3 for each 10 seconds over • Within area: -3 for each infraction of the boundary **Teams that infringe the rules should be warned that such infringements will not be allowed in the second performance and marks deducted appropriately at the judge's discretion.**	
Total Score		**/40**

Technical Interview Score Sheet

Team Name:…… **Country:** …… **Primary/Secondary**

Assessors Name:……

Teams must bring copies of their programs and details of mechanical and electrical hardware to the interview; otherwise, these categories cannot be assess

Category	Examples of how high marks may be achieved are:	Mark
Programming	• Using an age appropriate programming language • Able to explain how the program works and interactions between the hardware and software • Creating innovative programming solutions • Developing libraries • Explain decisions made and any limitations of the software	/8
Mechanical Hardware	• Implementing reliable mechanical systems • Complex/innovative mechanical systems • Able to explain how the mechanical systems work • Mechanisms that have been developed for very high precision, or for mechanically 'difficult' situations • Appropriate actuators have been used, and there is an understanding of why they have been chosen.	/8
Electronic Hardware	• Electronics have been developed/home built (as age appropriate) • An understanding of how the electronics works • Innovative use of sensors/integration of sensors • Innovative use of technologies to aid performance (e.g., cameras, speed controllers/motor controllers, GPS, different micro-controllers etc.) • Explain decisions made and any limitations of the electronics	/8
Robotic Communication & Interaction	• Use of effective robotic communication • An understanding of how the communication is occurring • Development of communication architectures • Sensors used to achieve robot-robot interaction, for example robots following robots • Sensors used to achieve robot-human interaction	/6
Deductions (at discretion of judges – up to 15 marks each)	• Judges should satisfy themselves that this is the work of the students. • Originality of robot software and hardware (no re-use from previous competitions) • All team members are able to discuss their technical involvement with the robot	
Total Score		**/30**

Award Recommendations: **Notes:**

Open Technical Demonstration Score Sheet

Team Name:…… **Country:** …… **Primary/Secondary**

The aims of the Open Technical Demonstration are to:

- Demonstrate the capabilities of the robot(s)
- Explain the robot system and key capabilities
- Demonstrate fully working robot systems which work as described
- Focus on the key, innovative and original capabilities of the robot(s) developed
- Effectively communicates the technical capabilities of the robot to the audience with a high quality demonstration

Examples of areas on which the demonstration and explanation could cover include:

- Demonstration and explanation of a working mechanism which is complex, effective, overcomes a particular challenge or addresses reliability and stability
- Demonstration of successful robot-robot or robot-human interactions(e.g. through sensors or communication protocols)
- Successful implementation of a software algorithm
- A specific sub-system which is original and innovative
- Any interesting drive mechanisms and how these are controlled
- Choice of sensors and what the sensors are used to detect or interact with and explanation of algorithms used for sensing
- Any signal progressing of sensor data which is used (e.g. analogue/digital/frequency domain)
- Explanation of software architecture developed
- Integration of entire system (electronics, software, electronics, mechanics)
- Any communication mechanisms used to ensure efficient and reliable communication between robots
- The biggest challenges/problem which have been overcome, e.g. sourcing enough power, reliability, interactivity
- Any feedback loops used (e.g. using sensor feedback)

Category	Mark
Demonstration of robots' technical capabilities which are fully-working	**/15**
Explanation of robots' capabilities	**/10**
Clarity and quality of the demonstration	**/5**
Deductions	
Total Score	**/30**

Award Recommendations: **Notes:**