



## **BotsIQ Documentation**

BotsIQ recognizes the importance of documentation and has therefore instituted the mandatory presentation of team documentation for the 2007 National Competition. All teams are required to bring their documentation to check-in and will be judged by officials at the event for completeness and excellence. There will be a certificate presented to each team that complies with this requirement according to all the rules and there will be an award for the team that provides the best documentation for this event in each division.

### **Why have a documentation check?**

Keeping accurate records of an engineering project is an important goal. Records serve not only as a communication device between group members, but as legal media proving design ideas. In industry, inventions without dated and signed documents (that show the process followed) rarely get patents. In education notebooks, journals, portfolios and presentations are used to validate and assist in student learning. BotsIQ's goal is to create a well educated, technologically skilled workforce. Therefore we are requiring adequate documentation of the team's effort and of the process followed.

### **What constitutes proper documentation?**

Acceptable documentation can come in many forms; however, this year as we institute the document check for the first time, we will limit the documentation to **Personal Robot Journals** and **Robot Project Portfolios**. Each robot project should have its own unique Robot Project Portfolio. Every competitor should maintain a Personal Robot Journal.

### **What should a Robot Project Portfolio entail?**

A portfolio is a collection of materials assembled over a period of time by a learner to provide evidence...of his/her competence, knowledge, skills, abilities, dispositions and improvements toward a project or life goal in the area in which the learner is preparing (i.e. Engineering).

## **Robot Project Portfolio** (should show evidence of)

- Design Motivation
- Team Procedures
  - Team Mgmt
  - Material Mgmt
  - Accounting/Budget
  - Time Mgmt
  - Data Mgmt
  - Promotional/Fundraising
- Design Process
  - Research Methods
  - CAD models
  - Refinement
  - Structural Analysis
  - Engineering Drawings set
  - Material selection
  - Manufacturing plans
  - Assembly models
  - Weapon system details
  - Drive system details
  - Power system details
  - Wiring schematic
  - Testing results
- Strategy
  - Offensive
  - Defensive
  - Winning

The Robot Project Portfolio should be a three ring binder that shows evidence of the above information. The judges will spend approximately 15 minutes with each team looking at their portfolios and journals so it is important to take this into consideration when creating the portfolios.

### **The Personal Robot Journal**

A journal or composition will be required to show evidence that all team members were intricately involved with the robot project as specified in the BotsIQ team member rules. Each member of the team is required to submit **one** of these **two** items for this year's event.

The Personal Robot Journal must consist of a composition notebook with entries written by the student that document what the student's individual contribution to the team was including; design, fabrication, promotion, planning etc. The journal should not directly duplicate items in the portfolio. It should record—in writing—the individual effort and the process followed.

Each entry:

- Should include a summary. (Maximum of 50 words)
- Should be signed and dated by the project member
- Should be hand written in pen on the fronts of each page only. Any errors should be crossed out with a single line. Pages may not be removed.
- The backs of each page can be used to add related computer printouts or graphics.

**OR**

A Robot Project Composition, which describes the student's individual contributions and involvement, and a description of the robot, its strengths, weaknesses and team strategies for driving and competing. This two page composition needs to be put into a duo-tang type folder with the student's and the team's name on it.

### **How will BotsIQ score these documents?**

A rubric will be used to score the Robot Project Portfolio; below you will be given a sample of the criteria for the judging. The Personal Robot Journal will be assessed by means of compliance. Every student attending the event will be required to have either a composition notebook or a 2 page composition. All documents will be required at check-in.

### **How is a documentation check performed at the event?**

Competitors are required to arrive with their journal (either the composition notebook or 2 page composition). Portfolio and journals will be looked at together to verify the work of individual team members as well as the group in whole.

The documentation check will be a closed door type interview with the competitors, robot and officials only. Teams will be asked to select (their best) 3-5 members for the interview. Three judging officials will be assessing the teams so that there are no split decisions on assessment criteria.

The officials' ultimate goal is to verify that the journal entries, portfolio and robot reflect the actual contributions made by the individuals and by the team. The judges will ask questions of each team member to help in this determination.

At the conclusion of the documentation check, the officials should have a clear understanding of the process followed and of the group's efforts. If an inappropriate amount of information about the project is discovered to be unknown, wrong or missing, the group will fail the doc check.

A provision will be made for a doc check re-interview. Groups that fail, just like safety inspections, can try again. Unfortunately they will go to the end of the line and should wait until all first interviews are complete. A secondary interview will

be completed by different officials and scheduled as time is available. Failure will cause immediate disqualification.

**Example Documentation Check Rubric**

Criteria	All/Excellent	Some/Good	None/Poor
<b>Journals (25% of score)</b>			
Submitted			
Format correct			
Satisfactory # of Entries			
<b>or Composition</b>			
Submitted			
Format correct			
Duo Tang			
<b>Portfolio (50% of score)</b>			
Design Motivation			
Influences			
Team Procedures			
Team Mgmt			
Material Mgmt			
Accounting/Budget			
Time Mgmt			
Data Mgmt			
Promotional/Fundraising			
Design Process			
Research Methods			
CAD models			
Refinement			
Structural Analysis			
Engineering Drawings set			
Material selection			
Manufacturing plans			
Assembly models			
Weapon system details			

Drive system details			
Power system details			
Wiring schematic			
Testing results			
Strategy			
Offensive			
Defensive			
Winning			
<b>Interview (25% of score)</b>	Reasonable	Questionable	Doubtful
Answers to Standard Questions			
Answers to Supplementary Questions			
Evidence of Safety procedures			
Evidence of Teamwork			
Evidence of Shop skills learned			

Judges will determine appropriate supplementary questions for each group as needed.

A failure will be defined as below 75% overall score from the rubric. Teams that fail will not get a copy of the rubric, only advice from the judges on how to pass a doc check re-interview--if possible.