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# RoboCup@Home

Forms & Score Sheets

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Version: 2011 Revision: 286:288  
Last Build Date: June 13, 2012 Time: 896  
Last Changed Date: 2012-06-04 14:41:02 +0200 (Mon, 04 Jun 2012)

# Registration Form



**Team name:** \_\_\_\_\_

**Team leader name:** \_\_\_\_\_

**Weight & dimensions (robot 1):** \_\_\_\_\_

**Weight & dimensions (robot 2):** \_\_\_\_\_

**External devices:** \_\_\_\_\_

## Safety first!

The speed of the robots should ensure safe operation. This means that the robot is not allowed to go faster than the local speed limits. During operation in an environment with humans it may not exceed a walking pace of humans (6 kph, 3.7 mph).

At any time when operating the robot inside and outside the scenario the owners have to stop the robot immediately if there is a remote possibility of dangerous behavior towards people and/or objects. If a referee, member of the Technical or Organizational committee, an Executive or Trustee of the federation tells the team to stop the robot, there will be no discussion and the robot has to be stopped *immediately*.

If the team does not comply, the team and its members can be excluded from the ongoing competition immediately by a decision of the RoboCup@Home Technical Committee. Furthermore, the team and its members can be banned from future competitions for a period not less than a year by a decision of the RoboCup Federation Trustee Board.

I have read and fully understood the "Safety First" statement and agree to it. Furthermore, I agree to obey the rules in the official RoboCup@Home rulebook.

\_\_\_\_\_  
*Date & time*

\_\_\_\_\_  
*Team leader*

# Score Sheet



Test: Robot Inspection

Team name: \_\_\_\_\_

Referee name: \_\_\_\_\_

The maximum time for this test is *5 minutes*.

Action	Score	1st try	2nd try
<b>Registration (up to pressing emergency button)</b>			
Autonomous registration (one robot)	400	_____	_____
Autonomous registration (two robots)	2 × 200	_____	_____
<b>Leaving the arena (after releasing the emergency button)</b>			
Autonomously leaving (one robot)	100	_____	_____
Autonomously leaving (two robots)	2 × 50	_____	_____
<b>Neat Appearance</b>			
No wires hanging out of the robot, e.g., no functional wire has to be tied to the robot, no duct-tape, internals covered, etc.	200	_____	_____
<b>Poster session</b>			
Arithmetic mean of scoring from evaluation sheets × 30	300	_____	_____
<b>Special penalties &amp; bonuses</b>			
Not attending	-500	_____	_____
Outstanding performance	100	_____	_____
<b>Total score</b>	1000	_____	_____

## Inspection:

Item	Robot 1	Robot 2
Emergency button	<input type="checkbox"/>	<input type="checkbox"/>
Start button	<input type="checkbox"/>	<input type="checkbox"/>
Speaker plug	<input type="checkbox"/>	<input type="checkbox"/>
Appearance OK	<input type="checkbox"/>	<input type="checkbox"/>
<b>Passed</b>	<input type="checkbox"/>	<input type="checkbox"/>

## Remarks:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date & time

Referee

Team leader

# Score Sheet



**Test:** Poster Session

**Team name:** \_\_\_\_\_

**Referee name:** \_\_\_\_\_

## Instructions:

1. Please watch all presentations carefully.
2. In addition, have a thorough view on all posters.
3. At the end of the presentation you may ask questions.
4. After presentation and questions, please fill in the evaluation sheet below.
5. Is not allowed to evaluate your own team.
6. You may use the space below "Remarks:" to take notes for yourself.
7. Enter your team's name ("Team name") and your name ("referee name") on top of the sheet.
8. Sign the form using either "Referee" or "Team leader" slots at the bottom.

## Evaluation sheet

Team	Quality of appearance of poster (0-10)	Quality of poster content (0-10)	Scientific value (0-10)	Poster presentation and questions (0-10)
CAMBADA@Home				
Donaxi@Home				
Dong Yang				
eR@sers				
Golem				
homer@UniKoblenz				
Markovito				
MRL				
NimbRo@Home				
Pumas				
RoboSiam@Home				
SKUBA				
Tech United				
ToBI (Team of Bielefeld)				
UChile HomeBreakers				
WrightEagle@Home				
ZJUPanda				

## Remarks:

\_\_\_\_\_  
*Date & time*

\_\_\_\_\_  
*Referee*

\_\_\_\_\_  
*Team leader*

# Score Sheet



**Test:** Follow me

**Team name:** \_\_\_\_\_

**Referee name:** \_\_\_\_\_

The maximum time of the test is *8 minutes*.

Action	Score	1st try	2nd try
<b>Points for the three sections</b>			
for the best time $\Delta t_1$ achieved in section 1, less points are given for longer times (see Normalization)	300	_____	_____
for the best time $\Delta t_2$ achieved in section 2, less points are given for longer times (see Normalization)	300	_____	_____
for the best time $\Delta t_3$ achieved in section 3, less points are given for longer times (see Normalization)	300	_____	_____
<b>Additional points</b>			
completing the full task	100	_____	_____
<b>Special penalties &amp; bonuses</b>			
Not attending	-500	_____	_____
Outstanding performance	100	_____	_____
<b>Total score</b>	<b>1000</b>	_____	_____

**Scoring remarks:** The score is based on the (accumulated) time taken at each ITP (intermediate time point) and at the final goal point (e.g.  $t_1 = 125sec, t_2 = 305sec, t_3 = 425sec$ ). Then the time intervals needed for each section are computed (e.g.  $\Delta t_1 = 125sec, \Delta t_2 = 180sec, \Delta t_3 = 120sec$ ). The scores are then normalized with regard to the best time interval achieved for this section (e.g.  $\Delta t_1^{min} = 100sec, \Delta t_2^{min} = 90sec, \Delta t_3^{min} = 120sec$ ). In the example a complete score of  $240 + 150 + 300 + 100 = 790$  points is achieved:

**Normalization:** If a team needs more time in a section than the best team, the score for that section  $i$  is computed by

$$\text{reduced score for section } i: 300 \times (\Delta t_i^{min} / \Delta t_i)$$

$$\text{where } \Delta t_1 = t_1 - 0, \quad \Delta t_2 = t_2 - t_1, \quad \Delta t_3 = t_3 - t_2$$

$\Delta t_1^{min}, \Delta t_2^{min}, \Delta t_3^{min}$  are the minimum time intervals achieved by a team.

**Remarks:**

\_\_\_\_\_   
 Date & time

\_\_\_\_\_   
 Referee

\_\_\_\_\_   
 Team leader

# Score Sheet



Test: Clean up

Team name: \_\_\_\_\_

Referee name: \_\_\_\_\_

The maximum time for this test is *8 minutes*.

Action	Score	1st try	2nd try
<b><i>Penalties involved per object grasped and placed</i></b>			
Successfully grasping and placing an object	1000	_____	_____
Placing an object at the wrong location	-600	_____	_____
Penalty for "hand over" instead of autonomous grasping	-400	_____	_____
Penalty for "hand over" instead of autonomous placing	-200	_____	_____
<b><i>Additional penalties</i></b>			
Indicating wrong information when asking for help.	-100	_____	_____
<b><i>Special penalties &amp; bonuses</i></b>			
Not attending	-500	_____	_____
Using start button	-100	_____	_____
Outstanding performance	100	_____	_____
<hr/>			
<b>Total score</b>	1000	_____	_____

**Normalization:** If a team achieves more than *1000 points* (without outstanding performance), the scores of all teams are normalized. That is, the team with maximally achieved score gets *1000 points*, the other teams accordingly less.

Remarks:

\_\_\_\_\_  
Date & time

\_\_\_\_\_  
Referee

\_\_\_\_\_  
Team leader

# Score Sheet



**Test:** Who is who

**Team name:** \_\_\_\_\_

**Referee name:** \_\_\_\_\_

The maximum time for this test is *10 minutes*.

<b>Action</b>	<b>Score</b>	<b>1st try</b>	<b>2nd try</b>
<b><i>Receive guests</i></b>			
Understanding name	$3 \times 25$	_____	_____
Using onboard microphone	$3 \times 75$	_____	_____
<b><i>Taking the order</i></b>			
Finding the calling person and asking it for its order	$200$	_____	_____
Asking the wrong person or something that is not a person	$-150$	_____	_____
Correctly understanding (and repeating) the order	$150$	_____	_____
<b><i>Grasping drinks</i></b>			
<i>Grasping a drink</i> (and successfully lifting it up to at least $5\text{ cm}$ for more than $10\text{ seconds}$ )	$3 \times 200$	_____	_____
<b><i>Delivering drinks</i></b>			
Delivering the <i>correct ordered drink</i> to a standing person	$2 \times 200$	_____	_____
Delivering the <i>correct ordered drink</i> to the sitting person	$250$	_____	_____
<b><i>Leaving the arena</i></b>			
Autonomously leaving the arena within the time limit	$100$	_____	_____
<b><i>Penalties</i></b>			
Talking to the wrong person (using wrong name)	$-50$	_____	_____
Talking to something that is not a person	$-150$	_____	_____
<b><i>Special penalties &amp; bonuses</i></b>			
Not attending	$-500$	_____	_____
Using start button	$-100$	_____	_____
Outstanding performance	$200$	_____	_____
<b>Total score</b>	$2000$	_____	_____

**Remarks:**

\_\_\_\_\_  
*Date & time*

\_\_\_\_\_  
*Referee*

\_\_\_\_\_  
*Team leader*

# Score Sheet



**Test:** Open challenge

**Team name:** \_\_\_\_\_

**Referee name:** \_\_\_\_\_

## Instructions:

1. Please watch all demonstrations carefully.
2. At the end of the demonstration you may ask questions.
3. After demonstration and questions, please fill in the evaluation sheet below.
4. Is not allowed to evaluate your own team.
5. You may use the space below "Remarks:" to take notes for yourself.
6. Enter your team's name ("Team name") and your name ("referee name") on top of the sheet.
7. Sign the form using either "Referee" or "Team leader" slots at the bottom.

## Evaluation sheet

Team	Overall demo (0-10)	H-R-I (0-10)	Robot Autonomy (0-10)	Usefulness for daily life (0-10)	Novelty/Scientific contribution (0-10)	Difficulty & Success (0-10)
CAMBADA@Home						
Donaxi@Home						
Dong Yang						
eR@sers						
Golem						
homer@UniKoblenz						
Markovito						
MRL						
NimbRo@Home						
Pumas						
RoboSiam@Home						
SKUBA						
Tech United						
ToBI (Team of Bielefeld)						
UChile HomeBreakers						
WrightEagle@Home						
ZJUPanda						

## Remarks:

\_\_\_\_\_  
*Date & time*

\_\_\_\_\_  
*Referee*

\_\_\_\_\_  
*Team leader*



# Score Sheet



**Test:** General Purpose Service Robot

**Team name:** \_\_\_\_\_

**Referee name:** \_\_\_\_\_

The maximum time for this test is *10 minutes*.

	Category I			Category II			Category III		
	Score item	DO	CO	Score item	DO	CO	Score item	DO	CO
Command I	1/3 Task	200	100	Questions	300	150	Task	300	150
	2/3 Task	200	100	1/2 Task	300	150	Indicating	200	100
	3/3 Task	200	100	2/2 Task	300	150	Explaining	300	150
		Alternative	200	100					
	Total			Total			Total		
Command 2	1/3 Task	200	100	Questions	300	150	Task	300	150
	2/3 Task	200	100	1/2 Task	300	150	Indicating	200	100
	3/3 Task	200	100	2/2 Task	300	150	Explaining	300	150
		Alternative	200	100					
	Total			Total			Total		
Command 3	1/3 Task	200	100	Questions	300	150	Task	300	150
	2/3 Task	200	100	1/2 Task	300	150	Indicating	200	100
	3/3 Task	200	100	2/2 Task	300	150	Explaining	300	150
		Alternative	200	100					
	Total			Total			Total		
Max/Category									

DO = default operator (refereeing TC members), CO = custom operator (chosen by the team)

Action	Score	1st try	2nd try
<b>Command categories</b>			
Maximum for Category I	600	_____	_____
Maximum for Category I	900	_____	_____
Maximum for Category I	1000	_____	_____
<b>Special penalties &amp; bonuses</b>			
Not attending	-500	_____	_____
Using start button	-100	_____	_____
Outstanding performance	250	_____	_____
<b>Total score</b>	2500	_____	_____

**Remarks:**

\_\_\_\_\_  
Date & time

\_\_\_\_\_  
Referee

\_\_\_\_\_  
Team leader

# Score Sheet



Test: Restaurant

Team name: \_\_\_\_\_

Referee name: \_\_\_\_\_

The maximum time for this test is *10 minutes*.

Action	Score	1st try	2nd try
<b><i>Guide Phase</i></b>			
Reaching a <i>location</i> in the guide phase	<i>5 × 50</i>	_____	_____
<b><i>Navigation Phase</i></b>			
Reaching a (task-relevant) <i>location</i> in the manipulation phase	<i>4 × 100</i>	_____	_____
<b><i>Grasping the correct objects</i></b>			
Successfully grasping a correct object from a shelf	<i>3 × 250</i>	_____	_____
<b><i>Delivering the correct objects</i></b>			
Successfully delivering the correct object to the correct location	<i>3 × 200</i>	_____	_____
<b><i>Special penalties &amp; bonuses</i></b>			
Not attending	<i>-500</i>	_____	_____
Outstanding performance	<i>200</i>	_____	_____
<hr/>			
<b>Total score</b>	<i>2000</i>	_____	_____

Remarks:

\_\_\_\_\_  
*Date & time*

\_\_\_\_\_  
*Referee*

\_\_\_\_\_  
*Team leader*

# Score Sheet



**Test:** Demo challenge

**Team name:** \_\_\_\_\_

**Referee name:** \_\_\_\_\_

## Instructions:

1. Please watch all demonstrations carefully.
2. At the end of the demonstration you may ask questions.
3. After demonstration and questions, please fill in the evaluation sheet below.
4. Is not allowed to evaluate your own team.
5. You may use the space below “Remarks:” to take notes for yourself.
6. Enter your team’s name (“Team name”) and your name (“referee name”) on top of the sheet.
7. Sign the form using either “Referee” or “Team leader” slots at the bottom.

## Evaluation sheet

Team	Overall demo (0-10)	H-R-I (0-10)	Robot Autonomy (0-10)	Usefulness for daily life (0-10)	Novelty/Scientific contribution (0-10)	Difficulty & Success (0-10)
CAMBADA@Home						
Donaxi@Home						
Dong Yang						
eR@sers						
Golem						
homer@UniKoblenz						
Markovito						
MRL						
NimbRo@Home						
Pumas						
RoboSiam@Home						
SKUBA						
Tech United						
ToBI (Team of Bielefeld)						
UChile HomeBreakers						
WrightEagle@Home						
ZJUPanda						

## Actual criteria (as in the rulebook)

- complexity of the task and performance,
- marketability/story,
- safety, and
- human-robot-interaction/usability/appearance

Up to 1500 points, plus up to 500 for interaction (with the robot of another team).

## Remarks:

\_\_\_\_\_

*Date & time*

\_\_\_\_\_

*Referee*

\_\_\_\_\_

*Team leader*

# Score Sheet



**Test:** Final Demonstration – Jury Evaluation

**Team name:** \_\_\_\_\_

**Referee name:** \_\_\_\_\_

## Instructions:

1. Please watch all demonstrations carefully.
2. At the end of the demonstration you may ask questions.
3. After demonstration and questions, please fill in the evaluation sheet below.
4. You may use the space below “Remarks:” to take notes for yourself.
5. Enter your your name (“referee name”) on top of the sheet.
6. Sign the form using the “Referee” slot at the bottom.

## Evaluation sheet

Team	Originality and presentation* (0-10)	Usability / Human-Robot Interaction (0-10)	Usefulness for daily life (0-10)	Difficulty & Success (0-10)
CAMBADA@Home				
Donaxi@Home				
Dong Yang				
eR@sers				
Golem				
homer@UniKoblenz				
Markovito				
MRL				
NimbRo@Home				
Pumas				
RoboSiam@Home				
SKUBA				
Tech United				
ToBI (Team of Bielefeld)				
UChile HomeBreakers				
WrightEagle@Home				
ZJUPanda				

\* Story telling is to be rewarded

## Remarks:

\_\_\_\_\_  
*Date & time*

\_\_\_\_\_  
*Referee*

\_\_\_\_\_  
*Team leader*

# Score Sheet



**Test:** Final Demonstration – Executive Committee

**Team name:** \_\_\_\_\_

**Referee name:** \_\_\_\_\_

## Instructions:

1. Please watch all demonstrations carefully.
2. At the end of the demonstration you may ask questions.
3. After demonstration and questions, please fill in the evaluation sheet below.
4. You may use the space below “Remarks:” to take notes for yourself.
5. Enter your your name (“referee name”) on top of the sheet.
6. Sign the form using the “Referee” slot at the bottom.

## Criteria:

- Scientific contribution
- Contribution to @Home
- Relevance for @Home / Novelty of approaches
- Presentation and performance in the finals

## Evaluation sheet

Team	Scientific contribution (0-10)	Contribution to @Home (0-10)	Relevance for @Home/ Novelty of approaches (0-10)	Presentation & Performance (demo) (0-10)
CAMBADA@Home				
Donaxi@Home				
Dong Yang				
eR@sers				
Golem				
homer@UniKoblenz				
Markovito				
MRL				
NimbRo@Home				
Pumas				
RoboSiam@Home				
SKUBA				
Tech United				
ToBI (Team of Bielefeld)				
UChile HomeBreakers				
WrightEagle@Home				
ZJUPanda				

## Remarks:

\_\_\_\_\_  
*Date & time*

\_\_\_\_\_  
*Referee*

\_\_\_\_\_  
*Team leader*