



RoboCup@Home

Forms & Score Sheets

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
Registration (up to pressing emergency button)			
Autonomous registration (one robot)	400	_____	_____
Autonomous registration (two robots)	2×200	_____	_____
Leaving the arena (after releasing the emergency button)			
Autonomously leaving (one robot)	100	_____	_____
Autonomously leaving (two robots)	2×50	_____	_____
Neat Appearance			
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	_____	_____
Poster session			
Arithmetic mean of scoring from evaluation sheets $\times 30$	300	_____	_____
Special penalties & bonuses			
Not attending	-500	_____	_____
Outstanding performance	100	_____	_____
<hr/>			
Total score	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"/>
Passed	<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)
Pumas				
Sun				
Reem@IRI				
BORG				
UChile HomeBreakers				
BART LAB AssistBot				
ToBi (Team of Bielefeld)				
Dong Yang				
SKUBA				
Golem				

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
Points for the three sections			
for the best time Δt_1 achieved in section 1, less points are given for longer times (see Normalization)	300	_____	_____
for the best time Δt_2 achieved in section 2, less points are given for longer times (see Normalization)	300	_____	_____
for the best time Δt_3 achieved in section 3, less points are given for longer times (see Normalization)	300	_____	_____
Additional points			
completing the full task	100	_____	_____
Special penalties & bonuses			
Not attending	-500	_____	_____
Outstanding performance	100	_____	_____
Total score	1000	_____	_____

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. $t_1 = 125\text{sec}$, $t_2 = 305\text{sec}$, $t_3 = 425\text{sec}$). Then the time intervals needed for each section are computed (e.g. $\Delta t_1 = 125\text{sec}$, $\Delta t_2 = 180\text{sec}$, $\Delta t_3 = 120\text{sec}$). The scores are then normalized with regard to the best time interval achieved for this section (e.g. $\Delta t_1^{\min} = 100\text{sec}$, $\Delta t_2^{\min} = 90\text{sec}$, $\Delta t_3^{\min} = 120\text{sec}$). 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

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

where $\Delta t_1 = t_1 - 0$, $\Delta t_2 = t_2 - t_1$, $\Delta t_3 = t_3 - t_2$, and Δt_1^{\min} , Δt_2^{\min} , Δt_3^{\min} are the minimum time intervals achieved by a team.

Remarks:

Date & time

Referee

Team leader

Score Sheet



Test: Cocktail Party

Team name: _____

Referee name: _____

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

Action	Score	1st try	2nd try
<i>Taking the orders</i>			
Detecting the calling persons	3×150	_____	_____
Understanding and repeating the correct person and drink names (half points are given if either of the names is incorrectly understood)	3×100	_____	_____
<i>Grasping drinks</i>			
<i>Grasping an ordered drink</i> (and successfully lifting it up to at least 5 cm for more than 10 seconds)	3×200	_____	_____
<i>Delivering drinks</i>			
Delivering the <i>correct ordered drink</i>	3×200	_____	_____
<i>Leaving the arena</i>			
Autonomously leaving the arena within the time limit	50	_____	_____
<i>Penalties</i>			
Talking to the wrong person (using wrong name)	-50	_____	_____
Talking to something that is not a person	-150	_____	_____
<i>Special penalties & bonuses</i>			
Not attending	-500	_____	_____
Using start button	-100	_____	_____
Outstanding performance	200	_____	_____
<hr/>			
Total score	2000	_____	_____
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
<i>Penalties involved per object grasped and placed</i>			
Successfully grasping and placing an object at the correct location	<i>1000</i>	_____	_____
Placing an object at a wrong location	<i>-600</i>	_____	_____
Penalty for "hand over" instead of autonomous grasping	<i>-400</i>	_____	_____
Penalty for "hand over" instead of autonomous placing	<i>-200</i>	_____	_____
<i>Additional penalties</i>			
Indicating wrong information when asking for help.	<i>-100</i>	_____	_____
<i>Special penalties & bonuses</i>			
Not attending	<i>-500</i>	_____	_____
Using start button	<i>-100</i>	_____	_____
Outstanding performance	<i>100</i>	_____	_____
<hr/>			
Total score	<i>1000</i>	_____	_____

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: Emergency Situation

Team name: _____

Referee name: _____

The maximum time for this test is *7 minutes*.

Action	Score	1st try	2nd try
<i>Detecting fire/smoke</i>			
Automatic detection of fire/smoke	200	_____	_____
<i>Saving persons (see below for handling of multiple persons)</i>			
Person found and robot correctly asking for his/her status	200	_____	_____
Talking to something that is not a person	-100	_____	_____
Correctly understanding the answers of the person	150	_____	_____
Correctly guiding the person to an exit	150	_____	_____
<i>Exit the arena</i>			
If the robot exit the arena after all the persons have been saved	100	_____	_____
<i>Report</i>			
Up to 200 points (decided by TC/referees) are awarded for usefulness/completeness of information in the PDF report	200	_____	_____
<i>Special penalties & bonuses</i>			
Not attending	-500	_____	_____
Using start button	-100	_____	_____
Outstanding performance	100	_____	_____
<hr/>			
Total score	1000	_____	_____

Saving multiple persons: In case multiple persons are saved, the best achieved partial score for a positive item is obtained. Negative scores are accumulated, while no total negative score can be achieved in this test. Example: Finding all five persons, correctly talking to them and guiding one of them to the exit gives 500 points. Guiding all of them to the exit gives additional 100 points if the robot exits the arena afterwards (i.e., total 600 points). If the TC/referees award 50 points for the PDF report (total 650 points), but the robot also talked 7 times to something that was not a person, the robot scores total 0 points in the test.

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)
Pumas						
Sun						
Reem@IRI						
BORG						
UChile HomeBreakers						
BART LAB AssistBot						
ToBi (Team of Bielefed)						
Dong Yang						
SKUBA						
Golem						

Remarks:

Date & time

Referee

Team leader

Score Sheet



Test: (Enhanced) 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 1	1/3 Task	200	100	Questions	300	150	Task	300	150
	2/3 Task	200	100	1/2 Task	200	100	Indicating	200	100
	3/3 Task	200	100	2/2 Task	400	200	Explaining Alternative	300 200	150 100
	Total			Total			Total		
Command 2	1/3 Task	200	100	Questions	300	150	Task	300	150
	2/3 Task	200	100	1/2 Task	200	100	Indicating	200	100
	3/3 Task	200	100	2/2 Task	400	200	Explaining Alternative	300 200	150 100
	Total			Total			Total		
Command 3	1/3 Task	200	100	Questions	300	150	Task	300	150
	2/3 Task	200	100	1/2 Task	200	100	Indicating	200	100
	3/3 Task	200	100	2/2 Task	400	200	Explaining Alternative	300 200	150 100
	Total			Total			Total		
Max/Category									

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

Action	Score	1st try	2nd try
Command categories			
Maximum for Category I	600	_____	_____
Maximum for Category II	900	_____	_____
Maximum for Category III	1000	_____	_____
Special penalties & bonuses			
Not attending	-500	_____	_____
Using start button	-100	_____	_____
Outstanding performance	250	_____	_____
Total score	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
<i>Guide Phase</i>			
Reaching a <i>location</i> in the guide phase	5×50	_____	_____
<i>Navigation Phase</i>			
Reaching a (task-relevant) <i>location</i> in the manipulation phase	4×100	_____	_____
<i>Grasping the correct objects</i>			
Successfully grasping a correct object from a shelf	3×250	_____	_____
<i>Delivering the correct objects</i>			
Successfully delivering the correct object to the correct location	3×200	_____	_____
<i>Special penalties & bonuses</i>			
Not attending	-500	_____	_____
Outstanding performance	200	_____	_____
<hr/>			
Total score	<i>2000</i>	_____	_____

Remarks:

Date & time

Referee

Team leader

Score Sheet



Test: Demo challenge

Team name: _____

Referee name: _____

Criteria (up to 1500 points, plus up to 500 for interaction with another team)

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

Evaluation sheet

Team	Notes
Dong Yang	
ToBi	
Reem@IRI	
NimbRo@Home	
Tech United Eindhoven	
BORG	
SKUBA	
MRL	
homer@UniKoblenz	
WrightEagle@Home	
Pumas	

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)
homer@UniKoblenz				
BORG				
Tech United Eindhoven				
NimbRo@Home				
WrightEagle@Home				

* 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)
homer@UniKoblenz				
BORG				
Tech United Eindhoven				
NimbRo@Home				
WrightEagle@Home				

Remarks:

Date & time

Referee

Team leader