# RoboCup@Home

### Forms & Score Sheets

# Registration Form

**Team name:** _____

**Team leader name:** _____

**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.

|  | Robot 1 | Robot 2 |
|---|---|---|
| Size of the robot |  |  |
| Emergency button(s) |  |  |
| Start button |  |  |
| Collision avoidance |  |  |
| Voice of the robot |  |  |
| Robot speaker system |  |  |
| Use of external devices |  |  |
| ASR Bypassing method |  |  |
| Other safety issues |  |  |
| Custom containers. |  |  |

**External Devices:**

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:**             Poster Session

**Team name:**        _____

**Referee name:**     _____

**Instructions:**

1. Please watch all posters carefully.
2. There will be a team member for questions about the poster.
3. After viewing the poster and asking your questions you may have, 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 score of poster (0-10) |
|---|---|
| Chief Scientist Office | |
| EPFL@Home | |
| eR@sers | |
| FBOT@Home | |
| Gentlebots | |
| Hibikino-Musashi@Home | |
| KIARO | |
| LAR@Home | |
| LASR | |
| LCASTOR | |
| LyonTech | |
| NimbRo@Home | |
| Pumas | |
| PUMAS-DSPL | |
| RoboCanes-VISAGE | |
| RoboFEI@Home | |
| RoBorregos rUNSWeep | |
| Serious Cybernetics Corporation (SCC) | |
| Sinfonia Uniandes | |
| SKUBA | |
| SOBITS | |
| SocRob@Home | |
| SUTURO-VaB | |
| Team of Bielefeld (ToBi) | |
| Tech United Eindhoven | |
| Tidyboy-DSPL | |
| Tidyboy-OPL | |
| Tinker | |
| TRAIL | |
| UT Austin Villa@Home | |

**Remarks:**

_____     _____     _____
*Date & time*                          *Referee*                              *Team leader*

# Score Sheet

**Test:**          Help Me Carry

**Team name:**          _____

**Referee name:**          _____

| Action | Score | $1^{st}$ try | $2^{nd}$ try | $3^{rd}$ try |
|---|---|---|---|---|
| *Main Goal* | | | | |
| Following the person to the car | 300 | _____ | _____ | _____ |
| Perceiving the correct beg (visualize on screen or say which one) | 15 | _____ | _____ | _____ |
| Picking up the correct bag | 100 | _____ | _____ | _____ |
| Avoiding the crowd of people obstructing the path | 50 | _____ | _____ | _____ |
| Avoiding the small object on the ground | 50 | _____ | _____ | _____ |
| Avoiding the hard-to-see object | 50 | _____ | _____ | _____ |
| Avoiding the area blocked with retractable barriers | 50 | _____ | _____ | _____ |
| *Bonus rewards* | | | | |
| Re-reaching the starting location | 200 | _____ | _____ | _____ |
| Joining and staying in the queue on the way to the arena | 300 | _____ | _____ | _____ |
| *Penalties* | | | | |
| Dropping the bag | –50 | _____ | _____ | _____ |
| *Deus Ex Machina Penalties* | | | | |
| Rediscovering the operator by natural interaction | –50 | _____ | _____ | _____ |
| Rediscovering the operator by unnatural interaction | –100 | _____ | _____ | _____ |
| Rediscovering the operator by asking them to come back | –150 | _____ | _____ | _____ |
| Rediscovering the operator by direct contact | –200 | _____ | _____ | _____ |
| *Special Penalties & Bonuses* | | | | |
| Not attending | –500 | _____ | _____ | _____ |
| Using alternative start signal | –100 | _____ | _____ | _____ |
| Outstanding performance | 111 | _____ | _____ | _____ |
| *Recordings* | | | | |
| Duration (limit: **5:00** minutes) | | _____ | _____ | _____ |
| *Score per try* | 1115 | _____ | _____ | _____ |
| **Total Score** | 1226 | | _____ | |

**Remarks:**

_____          _____          _____
*Date & time*          *Referee*          *Team leader*

# Score Sheet

**Test:** General Purpose Service Robot

**Team name:** _____

**Referee name:** _____

| Action | Score | $1^{st}$ **try** | $2^{nd}$ **try** | $3^{rd}$ **try** |
|---|---|---|---|---|
| ***Main Goal*** | | | | |
| Executing the task associated with each command | *3×400* | _____ | _____ | _____ |
| ***Bonus Rewards*** | | | | |
| Understanding a command given by a non-expert operator | *3×100* | _____ | _____ | _____ |
| ***Deus Ex Machina Penalties*** | | | | |
| Using a custom operator | *3×–50* | _____ | _____ | _____ |
| Bypassing speech recognition | *3×–50* | _____ | _____ | _____ |
| Instructing a human to perform parts of the task will apply a percentage penalty according to similar penalties in other Stage I tests. | *3×–400* | _____ | _____ | _____ |
| ***Special Penalties & Bonuses*** | | | | |
| Not attending | *–500* | _____ | _____ | _____ |
| Using alternative start signal | *–100* | _____ | _____ | _____ |
| Outstanding performance | *150* | _____ | _____ | _____ |
| ***Recordings*** | | | | |
| Duration (limit: **5:00** minutes) | | _____ | _____ | _____ |
| ***Score per try*** | *1500* | _____ | _____ | _____ |
| **Total Score** | *1650* | _____ | | |

**Remarks:**

_____     _____     _____
*Date & time*                     *Referee*                         *Team leader*

# Score Sheet



**Test:**        Receptionist

**Team name:**   _____

**Referee name:**  _____

| Action | Score | $1^{st}$ try | $2^{nd}$ try | $3^{rd}$ try |
|---|---|---|---|---|
| ***Main Goal*** | | | | |
| Guide the guest to the other guests (navigate to the guest group) | *2×15* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| Look in the direction of navigation or at the navigation goal | *2×50* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| Introduce a new guest to every other guest and the host | *2×50* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| Offer a free seat to the new guest | *2×100* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| Look at the person talking | *2×25* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| Look at the person the robot is introducing the guest to | *2×50* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| ***Bonus Rewards*** | | | | |
| Open the entrance door for a guest | *2×100* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| Describe the first guest to the second guest (per corect attribute) | *4×30* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| Describe the first guest to the second guest (per incorrect attribute) | *4×−30* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| ***Penalties*** | | | | |
| Wrong guest information was memorized (continue with wrong name or drink) | *−50* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| Persistent inappropriate gaze (away from conversational partner) | *−50* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| Persistent gaze not in the direction of the navigation while moving. | *−10* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| ***Deus Ex Machina*** | | | | |
| Alternative HRI | *2×−75* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| Not recognizing people | *2×−200* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| ***Special Penalties & Bonuses*** | | | | |
| Not attending | *−500* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| Outstanding performance | *90* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| ***Recordings*** | | | | |
| Duration (limit: **5:00** minutes) | | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| ***Score per try*** | *900* | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |
| **Total Score** | *990* | _____ | | |

**Remarks:**

_____     _____     _____

*Date & time*               *Referee*               *Team leader*

# Score Sheet

**Test:** Serve the Breakfast

**Team name:** _____

**Referee name:** _____

| Action | Score | $1^{st}$ **try** | $2^{nd}$ **try** | $3^{rd}$ **try** |
|---|---|---|---|---|
| ***Main Goal*** | | | | |
| Initial navigation to pick up area | 15 | _____ | _____ | _____ |
| Perceiving object and categorizing it correctly (visualize or say) | 4×15 | _____ | _____ | _____ |
| Picking up breakfast items for transportation to the table | 4×50 | _____ | _____ | _____ |
| Placing breakfast items on the table | 4×50 | _____ | _____ | _____ |
| Pouring cereal into the bowl | 300 | _____ | _____ | _____ |
| ***Bonus Rewards*** | | | | |
| Pouring milk into the bowl | 300 | _____ | _____ | _____ |
| Placing a spoon next to the bowl | 100 | _____ | _____ | _____ |
| ***Penalties*** | | | | |
| Throwing or dropping an object on the table | 4×–30 | _____ | _____ | _____ |
| Spilling cereal while pouring | –100 | _____ | _____ | _____ |
| Spilling milk while pouring | –100 | _____ | _____ | _____ |
| ***Deus Ex Machina Penalties*** | | | | |
| Pointing at an object | 4×–5 | _____ | _____ | _____ |
| Handing an object over to the robot | 4×–50 | _____ | _____ | _____ |
| A human placing an object on the table | 4×–50 | _____ | _____ | _____ |
| A human pouring cereal in the bowl | –300 | _____ | _____ | _____ |
| ***Special Penalties & Bonuses*** | | | | |
| Not attending | –500 | _____ | _____ | _____ |
| Using alternative start signal | –100 | _____ | _____ | _____ |
| Outstanding performance | 117 | _____ | _____ | _____ |
| ***Recordings*** | | | | |
| Duration (limit: **5:00** minutes) | | _____ | _____ | _____ |
| ***Score per try*** | *1175* | _____ | _____ | _____ |
| **Total Score** | *1292* | _____ | | |

**Remarks:**

_____  _____  _____
*Date & time*  *Referee*  *Team leader*

# Score Sheet

**Test:**         Storing Groceries

**Team name:** _____

**Referee name:** _____

| Action | Score | $1^{st}$ try | $2^{nd}$ try | $3^{rd}$ try |
|---|---|---|---|---|
| *Main Goal* | | | | |
| Navigating to the table | 15 | _____ | _____ | _____ |
| Perceiving object and categorizing it correctly | 5×15 | _____ | _____ | _____ |
| Picking up an object for transportation to the cabinet | 5×50 | _____ | _____ | _____ |
| Perceiving objects in shelf and saying on which layer the currently handled object should be placed | 5×15 | _____ | _____ | _____ |
| Placing an object in the cabinet | 5×15 | _____ | _____ | _____ |
| Placing an object next to similar objects on the cabinet | 5×50 | _____ | _____ | _____ |
| Opening a cabinet door | 2×100 | _____ | _____ | _____ |
| Pouring cereal into the container | 300 | _____ | _____ | _____ |
| *Bonus Rewards* | | | | |
| Picking up an object from the shopping bag | 50 | _____ | _____ | _____ |
| Picking up a tiny object | 70 | _____ | _____ | _____ |
| Placing a tiny object | 30 | _____ | _____ | _____ |
| Picking up a heavy object | 70 | _____ | _____ | _____ |
| Placing a heavy object | 30 | _____ | _____ | _____ |
| *Deus Ex Machina Penalties* | | | | |
| A human handing an object over to the robot | 5×−50 | _____ | _____ | _____ |
| A human placing an object in the cabinet | 5×−15 | _____ | _____ | _____ |
| A human placing an object in the cabinet next to similar objects | 5×−50 | _____ | _____ | _____ |
| A human pointing at a target location | 5×−25 | _____ | _____ | _____ |
| A human opening the cabinet door | 2×−100 | _____ | _____ | _____ |
| Spilling cereal while pouring | −100 | _____ | _____ | _____ |
| Leaving cereal in the box | −100 | _____ | _____ | _____ |
| A human pouring cereal in the bowl | −300 | _____ | _____ | _____ |
| *Special Penalties & Bonuses* | | | | |
| Not attending | −500 | _____ | _____ | _____ |
| Using alternative start signal | −100 | _____ | _____ | _____ |
| Outstanding performance | 149 | _____ | _____ | _____ |
| *Recordings* | | | | |
| Duration (limit: **7:00** minutes) | | _____ | _____ | _____ |
| ***Score per try*** | *1490* | _____ | _____ | _____ |
| **Total Score** | *1639* | _____ | | |

**Remarks:**

_____  _____  _____
*Date & time*  *Referee*  *Team leader*

# Score Sheet

**Test:**          Clean the Table

**Team name:** _____

**Referee name:** _____

| Action | Score | $1^{st}$ **try** | $2^{nd}$ **try** | $3^{rd}$ **try** |
|---|---|---|---|---|
| ***Main Goal*** | | | | |
| Navigate to the table to pick up items | *15* | _____ | _____ | _____ |
| Picking tableware (cup, bowl) for transportation to the dishwasher | *2×40* | _____ | _____ | _____ |
| Picking up a plate for transportation to the dishwasher | *50* | _____ | _____ | _____ |
| Picking up cutlery (spoon, fork) for transportation to the dishwasher | *2×80* | _____ | _____ | _____ |
| Placing the tableware and cutlery inside the dishwasher | *5×50* | _____ | _____ | _____ |
| Placing an item correctly (cleanable, convenient like a human would) in the dishwasher | *5×50* | _____ | _____ | _____ |
| ***Bonus Rewards*** | | | | |
| Pulling out the dishwasher rack | *100* | _____ | _____ | _____ |
| Pushing in the dishwasher rack | *100* | _____ | _____ | _____ |
| Opening the dishwasher door | *200* | _____ | _____ | _____ |
| Closing the dishwasher door | *200* | _____ | _____ | _____ |
| Picking up the dishwasher tab for transportation to the dishwasher | *100* | _____ | _____ | _____ |
| Placing the dishwasher tab inside the dishwasher's hatch intended for the tab | *200* | _____ | _____ | _____ |
| ***Deus Ex Machina Penalties*** | | | | |
| Handing tableware over to the robot | *2×–40* | _____ | _____ | _____ |
| Handing plate over to the robot | *–50* | _____ | _____ | _____ |
| Handing cutlery over to the robot | *2×–80* | _____ | _____ | _____ |
| Having a human place an object in the dishwasher | *5×–50* | _____ | _____ | _____ |
| ***Special Penalties & Bonuses*** | | | | |
| Not attending | *–500* | _____ | _____ | _____ |
| Using alternative start signal | *–100* | _____ | _____ | _____ |
| Outstanding performance | *170* | _____ | _____ | _____ |
| ***Recordings*** | | | | |
| Duration (limit: **10:00** minutes) | | _____ | _____ | _____ |
| ***Score per try*** | *1705* | _____ | _____ | _____ |
| **Total Score** | *1875* | _____ | | |

**Remarks:**

| | | |
|---|---|---|
| _____ | _____ | _____ |
| *Date & time* | *Referee* | *Team leader* |

# Score Sheet

**Test:** Enhanced General Purpose Service Robot

**Team name:** _____

**Referee name:** _____

| Action | Score | $1^{st}$ **try** | $2^{nd}$ **try** | $3^{rd}$ **try** |
|---|---|---|---|---|
| ***Main Goal*** | | | | |
| Find and clearly state an encountered problem | *3×150* | _____ | _____ | _____ |
| Solve a problem | *3×650* | _____ | _____ | _____ |
| ***Deus Ex Machina Penalties*** | | | | |
| Asking for location of a problem | *3×−150* | _____ | _____ | _____ |
| Instructing a human to perform parts of the task will apply a percentage penalty according to similar penalties in other Stage II tests. | *3×−650* | _____ | _____ | _____ |
| ***Special Penalties & Bonuses*** | | | | |
| Not attending | *−500* | _____ | _____ | _____ |
| Using alternative start signal | *−100* | _____ | _____ | _____ |
| Outstanding performance | *240* | _____ | _____ | _____ |
| ***Recordings*** | | | | |
| Duration (limit: **10:00** minutes) | | _____ | _____ | _____ |
| ***Score per try*** | *2400* | _____ | _____ | _____ |
| **Total Score** | *2640* | _____ | | |

**Remarks:**

_____     _____     _____
*Date & time*                              *Referee*                              *Team leader*

# Score Sheet



**Test:** Restaurant

**Team name:** _____

**Referee name:** _____

| Action | Score | $1^{st}$ **try** | $2^{nd}$ **try** | $3^{rd}$ **try** |
|---|---|---|---|---|
| ***Regular Rewards*** | | | | |
| Detect calling or waving customer | *2×100* | _____ | _____ | _____ |
| Reach a customer's table without prior guidance/training | *2×100* | _____ | _____ | _____ |
| Take an order. | *2×300* | _____ | _____ | _____ |
| Serve an order. | *2×300* | _____ | _____ | _____ |
| ***Bonus Rewards*** | | | | |
| Use an unattached tray to transport | *2×200* | _____ | _____ | _____ |
| ***Regular Penalties*** | | | | |
| Not making eye-contact when taking an order | *2×–80* | _____ | _____ | _____ |
| Not reaching the bar (barman has to move from behind the bar to interact with the robot) | *2×–80* | _____ | _____ | _____ |
| ***Deus ex Machina Penalties*** | | | | |
| Being guided to a table | *2×–200* | _____ | _____ | _____ |
| Asking the Barman to handover object to the robot | *4×–50* | _____ | _____ | _____ |
| Guest needing to take the object from a tray or the robot's hand | *4×–50* | _____ | _____ | _____ |
| Being told/pointed where is a table/*Kitchen-bar* | *2×–100* | _____ | _____ | _____ |
| ***Special Penalties & Bonuses*** | | | | |
| Not attending | *–500* | _____ | _____ | _____ |
| Using alternative start signal | *–100* | _____ | _____ | _____ |
| Outstanding performance | *200* | _____ | _____ | _____ |
| ***Recordings*** | | | | |
| Duration (limit: **15:00** minutes) | | _____ | _____ | _____ |
| ***Score per try*** | *2000* | _____ | _____ | _____ |
| **Total Score** | *2200* | _____ | | |

**Remarks:**

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| | | |
|---|---|---|
| *Date & time* | *Referee* | *Team leader* |

# Score Sheet

**Test:**      Stickler for Rules

**Team name:**    _____

**Referee name:**   _____

| Action | Score | $1^{st}$ **try** | $2^{nd}$ **try** | $3^{rd}$ **try** |
|---|---|---|---|---|
| ***Regular Rewards*** | | | | |
| Identify a guest breaking a house rule (indicating the rule by voice). | *4×100* | _____ | _____ | _____ |
| Making eye-contact, politely clarify to the guest what action he should take. | *4×100* | _____ | _____ | _____ |
| Confirm that the guest is following the rule. | *4×200* | _____ | _____ | _____ |
| ***Bonus Rewards*** | | | | |
| Making eye-contact, politely clarify to the guest what rule is being broken. | *4×100* | _____ | _____ | _____ |
| ***Regular Penalties*** | | | | |
| Talking to a guest about a rule they are not breaking | *4×−100* | _____ | _____ | _____ |
| ***Deus ex Machina Penalties*** | | | | |
| A human directs the robot towards a guest who is breaking a rule | *4×−50* | _____ | _____ | _____ |
| A human tells the robot which rule is being broken | *4×−100* | _____ | _____ | _____ |
| ***Special Penalties & Bonuses*** | | | | |
| Not attending | *−500* | _____ | _____ | _____ |
| Using alternative start signal | *−100* | _____ | _____ | _____ |
| Outstanding performance | *200* | _____ | _____ | _____ |
| ***Recordings*** | | | | |
| Duration (limit: **10:00** minutes) | | _____ | _____ | _____ |
| ***Score per try*** | *2000* | _____ | _____ | _____ |
| **Total Score** | *2200* | _____ | | |

**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) | Relevance/usefulness to everyday life (0-10) | Elegance of overall demonstration (0-10) | Success of overall demonstration (0-10) |
|---|---|---|---|---|
| Fifth | | | | |
| Fourth | | | | |
| Third | | | | |
| Second | | | | |
| First | | | | |

⋆ 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 | Efficacy of solution to main objective (0-10) | Elegance of solution to main objective (0-10) | Innovation/contribution of additional tasks (0-10) | Difficulty/Success of overall demonstration (0-10) |
|---|---|---|---|---|
| Fifth | | | | |
| Fourth | | | | |
| Third | | | | |
| Second | | | | |
| First | | | | |

**Remarks:**

_____        _____        _____
*Date & time*                          *Referee*                              *Team leader*