



IEEE SA - 1872.2 Standard for Autonomous Robotics (AuR) Ontology Working Group

Call and Agenda

Meeting Agenda for July 2, 2020, 1PM-2:30PM UTC

You have been invited to the IEEE SA WG P1872.2 meeting. Join the meeting:

<https://join.skype.com/Buruz9jby49e>

1. Call to order (Howard)
2. Introduction and rosters (Alberto)
3. Approve today's agenda (Howard)
4. Approve prior meeting's minutes (Alberto; June 12)
5. Essential Patent Claims (Alberto)
6. Status updates/previous action items (Howard)
7. IEEE Copyright Policy (Howard)
8. Technical discussion (OWL implementation of current vocabulary and case study, by Mohammed)
9. Next meeting's topic: nomination of presentation
10. New business/announcements/events/last thoughts
11. Close meeting (Howard)

Minutes for the Official Meeting on July 2, 2020

Alberto Olivares-Alarcos transcribing



Rosters

- Y and N state for Yes and No
- ^ means the attendee is a *Voting Member*
- Members highlighted in **green** are eligible to become a *Voting Member*
- Members highlighted in **red** are eligible to lose *Voting Membership*
- Last column contains today's meeting attendees

Attendee Name	Role	Affiliation	Current Voting	Meetings Attended / last two	2-Jul
OBSERVATIONS					
Howard Li	Chair	University of New Brunswick, Canada	Y	2	Y^
Paulo Gonçalves	Co-Chair	IDMEC, Portugal	Y	2	Y^
Veera Ragavan	Co-Chair	Monash University, Australia	Y	2	N^
Alberto Olivares Alarcos	Secretary	IRI-CSIC, Spain	Y	2	Y^
Alaa Khamis	Member	General Motors, Canada	Y	2	Y^
Chris Nowak	Member	DST Group, Australia	Y	2	Y^
João M.L. Quintas	Member	Pedro Nunes Institute, Portugal	Y	2	Y^
Julia Bermejo	Member	UPM, Spain	Y	2	Y^
Ricardo Sanz	Member	UPM, Spain	Y	2	N^
Stefano Borgo	Member	ISTC/ CNR, Italy	Y	2	Y^
Edison Pignaton	Member	UFRGS, Brazil	N	0	N
Elisa Tosello	Member	UNIPD, Italy	Y	2	Y^
Daniel Beßler	Member	University of Bremen, Germany	N	0	N
Mohammed Diab	Member	UPC, Spain	Y	2	Y^
Marcos E. Bareto	Member	UFBA, Brazil	N	2	N
Joanna I. Olszewska	Member	University of West Scotland, UK	Y	1	Y^
Amelie Gyrard	Member	Knoesis, Wright State University	Y	2	Y^
Hiren Nakawala	Member	University of Verona, Italy	Y	2	Y^

Minutes for the Official Meeting on July 2, 2020

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Abdelghani Cibani	Member	UPEC, France	N	1	N
Maki Habib	Member	American University in Cairo	Y	2	N^
Dormant/Inactive					
Sandro R. Fiorini	Co-Chair	IBM, Brazil	N	0	
Eren Erdal Aksoy	Member	Halmstad University / Volvo	N	0	
Carlos Hernández	Member	TU Delft, Netherlads	N	0	
Joel L. Carbonera	Co-Chair	UFRGS, Brazil	N	0	
Edson Prestes	Member	UFRGS, Brazil	N	0	
Bao U. Nguyen	Member	University of Ottawa, Canada	N	0	
Kathryn Bennett	Guest	IEEE-SA	N		
Craig Schlenoff	Member	NIST	N		
Jaeho Lee	Member	University of Seul	N		
JiSang Hoon	Member	KITECH, Republic of Korea	N		
Ki-Yeop Sung	Member	KAR, Republic of Korea	N		
Taeyoung Uhm	Member	KIRO, Republic of Korea	N		
Sebastian	Guest	IEEE-RAS	N		
Christy Bahn	Program Manager	IEEE-SA	N	0	
Signe Redfield	Guest	United States Naval Research Laboratory	N		
Ali Akbari	Guest	UPC, Spain	N		
Total Attendees					13
Voting Members			16	0	16
Voting Members Present					13
Quorum					Y

Marcos could have become a voting member but he did not attend the meeting.

[Approval today's meeting agenda](#)

Motion Proposal : Howard

Seconded by: Alberto

Accepted Agenda: Yes

[Approval prior minutes](#)

Minutes were distributed and also made available on our google drive. Thus, members could

Minutes for the Official Meeting on July 2, 2020

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have read them, but Alberto summarized the minutes to ensure that everyone knew about them.

Motion Proposal: Alberto

Seconded by: Paulo

Accepted Minutes: Yes

Call for Essential Patent Claims (Alberto)

Done

Status updates/previous action items (Howard)

- Future publications
 - Article for RobOntics Workshop - Website: <https://robotics2020.github.io>
 - Book chapter suggested by Amelie - Architecture
 - Article about Knowledge driven design of robotic applications - Veera
- **[ONGOING]** Vocabulary development
 - Discussion about *Behavior* examples - If you have any example about using that concept in robotic scenarios, then you can contact Alberto for further instructions
 - **[NEW]** Alignment with Task Representation group - Terminology harmonization:
 - We have discussed several conflicting terms during this month. We have reached an agreement on: environment and task. We still need to work more on: action. Alaa has prepared a proposal for function's specializations, because our definition of action depends on function.
 - Needed to validate using case studies - Validation to see whether we need more entities or not
- Focus on case studies to validate the vocabulary
 - **[ONGOING] Mohammed's (we are working on it now)**
 - Amelie
 - Chris
 - FAiNDER (a company) which will use our standard in a Humanitarian Robotics scenario (landmine detection)
- **[ONGOING]** Christy Bahm asked us to start working on the draft for the standard
 - Howard has started filling up the draft's template that you can find on our drive. We will split sections, feel free to read it and choose a section to work on. Please, note that the most updated version is the .docx file, not the google doc.
 - Paulo is in charge of maintaining the stable version, should you have any comment or suggestion, please, prepare the text you want to add and present it



during any group meeting. The changes will be updated during that meeting and they will be accepted during the next official meeting.

- **[PAUSED]** Attracting industrial partners
 - FAinDer (already contacted and accepted, the CEO will join to our group)
 - KUKA (potential)
 - General Motors (they are already happy using SAE standard)
 - Veera got in touch with people from both OPCA and VDMA interested in collaborating with us. He will keep us updated about it

Copyright Policy (Howard)

Done.

Howard went through some slides about the copyright policy of IEEE. This policy is relatively large so we are not going to include all the material here, but two key points must be kept in mind:

- Anything (verbal or written) we discuss we need to make sure it has not copyright, if it has, we cannot discuss it during the meeting without official permission from the copyright holder.
- Whenever you bring some material to the group and it is discussed along with our meetings, you are granting the copyright of it to the IEEE. Either if you are the holder or your affiliation center is the holder. In the later case, you would need permission from your company or university. Note that when something which has copyright it is discussed during our meetings (sometimes permission would be needed), automatically, the copyright license will be granted to the IEEE. Note that anything developed during our group work, will have a copyright license owned by IEEE once the standard gets published.

Technical discussion

Topic: Mohammed's Case Study to validate the Standard's Vocabulary

Extension of his previous work where two robotic arms perform a collaborative pick-and-place task. In the new proposed scenario, another robot, with both manipulation and navigation capabilities (Tiago - PAL Robotics) enters in the loop, extending the capabilities of the other two static arms. We had no comments on it so he will start working on the technical details of his proposal throughout September. **Mohammed** in charge. **LAST UPDATE [SEP-26]:** Waiting for the rest of actions listed below, then, Mohammed will include the vocabulary in his

Minutes for the Official Meeting on July 2, 2020

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framework. It is fundamental to keep in mind we cannot publish any content of the future standard before it is published.

The current draft of the Standard already contains some definitions of Classes, however, the current version of the file contains a lot of details (from the discussion along the past months). We plan to reduce the document to have a single definition and example per term. **Stefano** will do this. **LAST UPDATE [SEP-12]:** Stefano already cleaned it, the previous work was put at the end of the document (just in case someone wants to see the discussions) and the section now only contains one single definition per term and examples. Stefano defined a new term which was not before 'action' so we discussed it. Specifically, the notion of 'intentionality' which is part of the definition of action was controversial, Stefano will continue thinking of it. The conclusion was: action will be defined from a neutral perspective and then have a specialisation of it which captures intentional actions.

We have only defined Classes in our first draft of the Standard, but not Relationships (in OWL, properties). The idea is to identify which ones are already defined in the IEEE 1872:2015 and come up with those which are not there and are necessary for us. During August and September, **Alberto**, **Paulo** and **Veera** will work on it offline (help is always welcome). **LAST UPDATE [SEP-12]:** Done and presented on September 6

Once we have done all the previous work, we can start writing the OWL file (we will need someone to do so, volunteers are welcome). **LAST UPDATE [SEP-26]:** Mohammed showed us his work in progress. We discussed the terms of: Time, TimePoint, TimeInterval, Environment, Event and Region.

PREVIOUS INTERESTING INFORMATION - Mohammed pointed out a recurrent issue we have discussed before, some of the terms within the proposed vocabulary were taken from SUMO in the previous standard (e.g. artefact, etc.). Our conclusion is that those inconsistencies will be fixed afterwards. We want to make SUMO optional.

We need to use the previous standard but we agreed to make SUMO optional. We could delete SUMO from the OWL file but this is not straightforward. Hence, we proposed to directly take the concepts we need from CORA (e.g. Robot) and put it in our OWL file always being congruent with the standard but not necessarily with SUMO.

Potentially, the scenario could be finished by July. Mohammed will do some work on integrating the concepts we need from CORA and finish other pending and partially done tasks. Alaa offered himself to help with PDDL, Elisa and Alberto also offered help.

Minutes for the Official Meeting on July 2, 2020

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LATEST UPDATE during today's meeting: Mohammed presented the current status regarding the development of the case study. The content of the presentation is in another PDF, and a summary of the current status is shown below.

- The PDDL domain is written
- The ontology is ready
- The system to parse the ontology is ready (Prolog-based)
- The predicates needed to query the knowledge base are written
- The next step is to create the code to link the planner execution with the knowledge base

Next meeting's topic: nomination of presentation

- Alaa [next weeks] - (potentially) JIT model

New business/announcements/events/last thoughts

- Found Patent from Magazino (see [here](#)) - Howard working on it
- Next official meeting for August 7

Close meeting (Howard)

Adjourned 2:30 PM UTC