

ROS Maritime WG Meeting (2024-01-30 19:08 GMT-5) - Transcript

Attendees

Arjo Chakravarty, Arjo Chakravarty's Presentation, Brian Bingham, Carlos Argueta, Evan Palmer's Presentation, Mabel Zhang, Mabel Zhang's Presentation, Markus Buchholz, Pratap Bhanu Solanki, Ryan Govostes, ty k, Woensug Choi

Transcript

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Mabel Zhang: Thank you everybody for coming let's still do it stand up. I think I know most people here but maybe not everybody knows each other. So for those who are new to the meeting we do this short stand up less than 20 seconds each just name affiliation. And what are you working on lately that's related to Ross their time. and we do this popcorn Style. Which means I guess I'll go first and then I'll pick on somebody and then that person will do their update and then pick on the next person until we're all A bit of a memory game, so I'm with open robotics team at intrinsic. I've been doing just kind of like looking at Dave trying to push it along and I recently made a

Mabel Zhang: ticket which I'll talk about a little bit later about Dave to ask you a new gazebo not about actually putting it but just outlining what are the things that are needed and then What else have I been doing?

Mabel Zhang: Miscellaneous stuff. Okay Evan

Evan Palmer's Presentation: Hey, I'm Evan Palmer. I'm a robotics PhD student Oregon State broadly working on underwater robotics manipulation. I'm going to pick on arjo.

Arjo Chakravarty: Sorry getting the update buttons on the challenge. Hi Mario, I'm from intrinsic. I used to work with Mabel on. The zero are the water stuff. I'm also doing a PhD right now with Singapore University of Technology design. Yeah, it's me next. right

Ryan Govostes: Hi, I'm Ryan devastis. I used to work at Woods Hole doing AVS. I recently moved to nascent organization called inkfish, and we're currently not building AVS but getting back into the Ross world. One thing that we did work on along with Carlos Aguerro was new tutorials for gazebo. So that's first on the community updates, so I'm really excited to get more people in the community contributing to those. So if you're interested in filling out some of the areas that aren't quite fleshed out, please let me know and be happy to work with you on that. Let's see Brian.

Brian Bingham: Hi, I'm Brian Bingham at the Naval Postgraduate School. Lately, I've been trying to figure out and I figured out who at the Office of Naval Research is interested in this stuff after everybody else left. So her name is Chris fusel in code 33, and in the past been involved in BRX the surface simulation and Dave the underwater submission. What's up? Where do you

Woensug Choi: I am one cell. I'm I'm a faculty member. I became active member two years ago in Korea Maritime and ocean University. I used to work in Mabel and To develop a day project and I haven't been working on it for last few years after leaving them. But I try my best to maintain the day project and answer questions about the solar plugin that I developed together. as an I am hoping to get some funds to dive myself into this project and very interested in improving and moving forward to Ross two and integrating with other.

Woensug Choi: GIS open source assume that makes all of this digital artificial environment of the cities and I was hoping to put myself on to that project. And next is Carlos.

Carlos Argueta: Yeah. Hi guys. I'm glad to be here. I'm definitely very near. so I was last year working with Ross on mobile robots, but I recently joined a shipbuilding company and there is interested in this company trying autonomous systems just experimenting at first and see if there's any potential for business development in that area.

Carlos Argueta: And then my boss basically pointed out to this group and I thought I would just give a shot and see what I could learn. I think one of the first things we might want to do is try to build a simulation and here there's a lot of gazebo simulation things happening right now within the group, so maybe I can both learn and contribute to something related to it.

00:05:00

Carlos Argueta: so who should be next? time maybe

Mabel Zhang: Hi, are you here? Or T. I don't know how to pronounce the name.

Carlos Argueta: Got here. I was also wondering.

Mabel Zhang: If he's not there protop, we're doing a stand-up where everybody stays their name and affiliation and what they're up to lately if I know you guys just joined by if either of you are on and have a mic. feel free to unmute otherwise

Pratap Bhanu Solanki: Okay, yes. Hello everyone. I'm Pratap. I'm currently working as a mechatronics engineer at asml but I had my interest in underwater robotics. as my PhD project was on that and I met Mabel and

Pratap Bhanu Solanki: at iOS 2023 in Detroit and wanted to be a part of this maritime. Meetings. So yeah, that's all on mind. Thank you.

Mabel Zhang: Thanks a Ty. Are you here? If you're not and walk this give you we don't want to.

Mabel Zhang: okay, I guess He'll come on if he wants to later. We can always come back. Thanks everybody. Let's see. We're 15 minutes in we have a bunch of community updates Brian since you mentioned the tutorials. Do you want to kind of tell people about it? I have the window open.

Ryan Govostes: Yeah, Sorry was prepared to say anything about it. But effectively there was some amazing work done between intrinsic and ambari on developing some plugins for gazebo for the long range of autonomous underwater vehicle and I thought it was a shame that there wasn't enough documentation about how those things worked. And so I talked to Carlos Aguero who's part of that project and asked if he would be willing to write some tutorials that kind of walk someone through the process from kind of the very big basics of how do we even get our vehicle into gazebo? And then how do

we add visuals? How do we start adding buoyancy to it? And so on and so forth. So it's really step by step spells it out. So it's really for basic users. We thought a lot about how we wanted to structure it so that depending on where you are in the development of your vehicle model that you can dive into the part that you're struggling with. I think that

Ryan Govostes: Parts are still kind of a black box to me, as an outsider to this world. I feel still hydrodynamics. It's kind of Figure out the right values for your vehicle because it's a really hard problem to solve. So if someone wants to kind of digest the process of how you actually get those values, that'd be cool. Otherwise, the recommendation is kind of just copy it from someone else's vehicle because that's what everyone seems to do.

Ryan Govostes: So I know one of the risks that I see here is as gazebo evolves these plugins evolved the tutorials get update and then they're only useful for a small window of time. So I'd really appreciate if people who are working on the core plugins for gazebo would try to keep this, kind of a living document. I also think at the moment. It's kind of buried under the Sim broad sub project of gazebo, which makes a little bit hard to find. So I'm hoping that we can kind of promote that to more of a top level of gazebo tutorial

Ryan Govostes: make it so that other resources that there are out there in the web can be linked to from here and we'll just make it easier to find information about this. So I know a lot of people in the room are working on simulations, so Anything you want to contribute would be super welcome. I don't know if that's good enough intro to what we did, but I don't want to kind of take up too much time. But if there's anything specific someone wants to talk to me about a project that you want to mention or part of the plugin that's not covered or anything. I'm happy to take an email thread and work with Carlos on fleshing out something that's not fully developed.

00:10:00

Mabel Zhang: Yeah, thank You just pointed out a visibility issue in gazebo. this is actually just kind of the top level tutorials. I know maybe you're thinking about these. We're So adhisu is working on the website. I think at least he's planning to make this kind of a statically generated website right now. It's dynamically generated which makes it really hard to combine these tutorials the Gazebo tutorials. These are like a doxygen generated whereas these ones are from markdown that we write in a different repository. So this is in the Gazebo Sims / stocks repository and this is in because he was in slash like gz whatever but this is kind of the top level tutorial the ones on the website are

Mabel Zhang: different I don't know but the Sim ones are linked as the first one here. But yeah.

Ryan Govostes: Yeah, it's just not easy to find but the other thing I should also mention is that as part of these tutorials. There's some code examples, especially when it gets to doing a surface vehicle you need to bring in a little bit more plugins and complex elements. So what Carlos decided to do there is just provide a sample project. And so that's another part where it just needs help to stay alive. And maybe we need to add something like continuous integration or something so that if there's a Code change we don't accidentally break our tutorials, but also, hopefully a useful resource for people

Mabel Zhang: Okay, good I didn't know about that. I wonder how I wonder. He's on the team. So. we keep them updated, but I don't know if we do. See I on the examples. Yeah, I do.

Arjo Chakravarty: yeah, we don't actually do see an examples and I think that's something that would probably make a good gsaw project possible. But right now writing test because he bought also shooting yourself, so

Mabel Zhang: Yeah, sock application. I think we're submitting one from osrf the window was last week and this week and then we hear back February 21st. I know these days because I was just looking them up for something else. If you're an open source organization, you can apply for g sock or yeah. So that's something to keep in mind. you can talk to Carlos used to be the person in charge of applying for all the G stock stuff. So if you want to Mentor a student with Carlos, that could be a way to do it. He should know the context.

Mabel Zhang: Yeah So eventually after we work on the website the idea is to combine the gzim tutorials with the top level ones on the website things should be better than Okay, the second item is just something that cat Scott found. She's our developer Advocate. I just thought it was pretty cool to share it. I should make this window a little bigger.

Mabel Zhang: I don't know who made this specially maybe some of but it's a nice compilation. It's got all the specs of the vehicles even started to cool resource. and then this is just interesting thing that we came across we were visiting one of the universities in Massachusetts. And there was this sale bar autonomous sailboat competition every year. It's near WPI worship Polytechnic Institute. It's one of the big robotics schools in the US and I guess they have autonomous. sailing competitions and it's related to some of the work that we stood but Reese linked me to this.

Mabel Zhang: Other thing he did with audiopilot with the Blue Boat and looks pretty cool. He has another visualization like this before sailboats with I do pilot as well. If you're interested check it out. That's one thing and what's this one?

Mabel Zhang: I think these links the same? that's a pull request. Okay. I don't have any more updates. Does anybody else have Community updates?

00:15:00

Arjo Chakravarty: Bring so we recently added box in the physics engine there for gazebo or not wrong. and I think now we also have added lots of hydrodynamics, which is added later on which kind of creates this funny thing. So then we ever discuss that rotation plan or transition plan. and those two

Mabel Zhang: Do you want to share your screen?

Mabel Zhang: yeah, we can just

Arjo Chakravarty: So when that's one thing I would like to bring up this. We hardly have so let me just bring this up. So.

Arjo Chakravarty: and it's gonna go to the

Arjo Chakravarty: right share So currently the SD formats back we kind of had this thing. Where is it link? Is it a link?

Mabel Zhang: Can you zoom in?

Arjo Chakravarty: Yeah, sorry I use super small text.

Arjo Chakravarty: There are sorry it was.

Arjo Chakravarty: right this and I think in inertia we have a recently little added masks description

Arjo Chakravarty: and then this I believe works at the presentation in there where we were individually the links right Mabel. so

Mabel Zhang: You're breaking up a little bit. Can you repeat that?

Arjo Chakravarty: sorry about that. It's my internet back. Let me try everything off my video then.

Mabel Zhang: Yeah, it is not moving at all.

Arjo Chakravarty: Sorry. Let me see. I think you had a compilation job in the background. So that doesn't help. So the format now has a good edit last time. and then...

Woensug Choi: I've experience of coding the hydrodynamic plugin kind of simulation in Python myself using The hydron plug-in Theory we've maybe to show to few minutes back in a tutorial.

Arjo Chakravarty: if you go to the height

Woensug Choi: the equation But I haven't tried anything about adding this flow fluid added message like tag.

Arjo Chakravarty: Right, right.

Woensug Choi: Maybe is there anyone who did any comparisons of how this impacts? Or is it not sure...

Mabel Zhang: so for contract Yeah.

Woensug Choi: how this 6x6 Matrix applies to? the Equation. I know how it is hydrogen. I mean the plugin works, but I'm not sure about that.

Mabel Zhang: so for context the fluid Atmos was added as part of another project with embari on the whack the wave energy converter.

Woensug Choi: And here I cannot hear anything.

Mabel Zhang: and this was Arjo, correct me if I'm wrong, but when we use the added math, I think this was in the work repo they have a different plugin. And so they turn off some parts of the built-in hydrodynamics plugin. So they use half of the hydrodynamics plugin and then they use half of their own thing to do some other stuff, but I don't remember whether who had a mass. Or maybe that was the viscous drag. I think that was the biggest drag. Yeah.

Arjo Chakravarty: So if I'm not wrong, I remember I mean I was not on the Web projects. I don't know. but I remember mentioning this very was on the project that we should I think the hydrated we are adding this then this also edit Mass Field in the hydrodynamics plug in this we should probably eventually deprecate the added this already. Does that job?

00:20:00

Mabel Zhang: You mean the plugin has another thing in addition

Woensug Choi: right Yeah. No. It already has one. I mean it goes into the equation the link you showed before the trail has simple there are many different versions of equations into it, but it's all based on fossils paper or the book. But it always has that edit Mass Matrix or the parameters into it. So iterator covers it

Mabel Zhang: I didn't realize there's a duplication. So arjo you're saying we should duplicate the one that's in the plugin now and then use the SDF instead.

Arjo Chakravarty: Yeah, it seems that would be the one way to do it. Again, 100 tried either and it would be good at some point. Someone has time to go and look into this because we need to find out that everything plan for this I think. and it reduces the amount of code that's three different places that

Woensug Choi: But I'm not sure...

Arjo Chakravarty: I yeah, that's my favorite.

Woensug Choi: because the equation that are describing the plugin. if the added masses are not there or they're provided from the SDF tags the stability of the plugin equation might different. I'm not sure about that but the plugin only has a diagonal parts of applicable but

Arjo Chakravarty: Not any more I think. so I didn't order terms sometime go I remember so that's something that

Woensug Choi:

Arjo Chakravarty: I mean, this is the core that we have inside. So for the new gazebo system, we do support the off diagonal terms. It's just I do noticeably is gonna be different but I remember we added this because supposedly this is Method stability. But I think that's gonna be some confusion as to what people should be using so we can keep both but we should have some kind of guidelines somewhere the tutorials or something saying hey, this is added at And is that at this space if you want to do some that will help.

Mabel Zhang: Yeah, supposedly the embari folks added this because they had higher requirements than the other AV project. So supposedly this should be better they added this because whatever that we initially implemented for our EV because that project was mission level wasn't good enough for the buoy project because they wanted to do controls. But nobody tested or comparabies. yeah,...

Woensug Choi: right

Mabel Zhang: so if we can have somebody to test them they probably have different behaviors. I would guess. as with those things

Mabel Zhang: but yeah, I took some notes on this in the meeting. No. When we share that. window this one

Mabel Zhang: I'll tag this and probably put it in the reply later. I'm discourse so that there's some visibility.

Mabel Zhang: Cool. Thanks.

Arjo Chakravarty: You open our disable issue also to this white people to things.

Mabel Zhang: Are volunteering for that?

Arjo Chakravarty: I am going to open the issue. I'm not going there for you.

Mabel Zhang: It is I just wanna know cool.

00:25:00

Mabel Zhang: yeah, cat was requesting that we put Help Wanted tag on things so that if people want to be interns and they want to help with issues they can try it like this one we're not asking them to write any new code. Right? We're just asking them to try these two things on. I don't know a vehicle or simple bodies. So maybe if you can put the Help Wanted tag and then put Implementation suggestion maybe we will get somebody from the community to do it.

Mabel Zhang: That would be Thank you. And then We have upcoming speakers tentatively February. I'm still talking to Joshua mangelsen coming to talk about Hollow ocean. he was going to talk with goge in December. I supposed so he might do it February March. I'm talking with a mirror. He was here in September in this meeting and he offered the rosemap MVP stands for marine vehicle packages. he got some funding to Port Huron too right now. It's still in Ross one. So he said I think we'll get possibly come talk about that and then Q2 Toby from gobisoft said

Mabel Zhang: he will be back to the US. So the time zone might be better for him to present here and one song you added this was the same people that arjo was going to get to come talk.

Woensug Choi: Right, the one that you mentioned before right. I attended a sound conference domestic conference in Korea and I visited there and somebody was demonstrating this pug to talk boats. Controlling this whole large commercial shipboard ship and they've done really decent job at me. I think it's completed job and they've done it by the funding of the Hyundai. The new name is HD Korea some ship and ocean engineering company and I asked he's in the same floor as me and in the next apartment, so I asked him to join this meeting and introduce the same presentation here. but last month the meeting was on 3:00 a.m. So I wasn't able to say if you're doing this 9 am like

Woensug Choi: Yet every twice or something. I would love to invite him to introduce his work here.

Mabel Zhang: Yeah, that would be great. We're thinking of doing this every January so maybe the next one will be April. I don't know where we'll be in April yet, but if we can schedule him, then we can make sure to put what whichever month he's available. to this time So yeah,...

Woensug Choi: right right

Mabel Zhang: you can if you want to invite him and then me and I will know which months to not schedule somebody. And to announce the meeting time. thank...

Woensug Choi: Okay.

Mabel Zhang: Wait, I actually does he have a public link to this because I've seen a video but it's internal.

Woensug Choi: I'm not sure. I'll ask sure.

Mabel Zhang: thanks.

Arjo Chakravarty: Is it the same project that we did where we have Concords? Because we didn't do controls that we just did a tasks this marriage coordination.

Mabel Zhang: It sounds like it is.

Arjo Chakravarty: So It's may not be the same.

Woensug Choi: Maybe not but I saw the lab has two three PhD candidates and lots of mastered students. So I'm sure they have new developments too. So I will invite him over and...

Arjo Chakravarty: Yeah.

Woensug Choi: explain about yourself. I'm sure it's not confidential because he already was able to present it at the domestic conference. So

Mabel Zhang: Cool sounds promising. Okay, and then we can move to the combump or I thought I opened it. I'm gonna be conscious of time. We have 20 minutes and then I think they'll make things we need to go is Dave and the red. And this one so I won't take too much time here. I think that come on board of the updates since we had the technical working group last time was basically once I did a bunch of work in Dave

Mabel Zhang: And they're in the done column. So do you want to talk about the tickets that you merged and closed

Woensug Choi: The main things are just solving and asking and replying to the questions of issues not working. And the top reason was the URL change of the ignition models that we're pulling in on the integrated world. So I've changed that part and it worked. All right, but it still takes about five minutes to download. I think the ignition server got much slower than before because it didn't last few years back. maybe the Korea and the United States the underwater. The internet line got shirt or something. I'm not sure but anyway the pr fixes it and the other part was the sonar plugin whether it works or not. I fixed that part by upgrading it and meanwhile, I was upgrading it. I made another document.

00:30:00

Woensug Choi: to support all this installation process for the Ubuntu 22.04 that was part of it. and for the day talks, I didn't make any PRS. I pretty much just merged it.

Mabel Zhang: Yeah, I saw you close a bunch of issues. Thank you for doing that. I think there were multiple and I think Markus answered one of them, too.

Mabel Zhang: but this one looks really similar to so we ran into this last week with some built-in worlds that we use in the Gazebo gzim splash screen. I think our replied

Mabel Zhang: it was something to do with.

Arjo Chakravarty: yeah, I remember opening that I was to do with ignition the default worlds is equal examples that still point the ignition or...

Mabel Zhang: Yeah, right. You open the issue? That's right.

Arjo Chakravarty: walking star. So, I mean this looks like it's interested.

Mabel Zhang: Yeah the other.

Arjo Chakravarty: And also it depends on what it is in Garden or harmonic does it seems to work in Garden one?

Mabel Zhang: Yeah, it works in Garden. I tried it I I guess this is Upstream. The other thing about Dave is that I uploaded some of them under any did the other half. I think we didn't delete it locally.

Mabel Zhang: If we use so, I think we're using the ones Upstream. I thought we were so if we just fixed it locally. That I don't know if it fixes it for everything. So there's two ways to do. This one is to keep them the models on fuel but we can't change them because they're all owned by different people Cole has a bunch dreamy has a bunch and I have a bunch and I can't change the ones that dreamy uploaded. So we would just have to change all the URLs in this repo.

Mabel Zhang: Some of these might be okay, but these are all the local copies. so

Mabel Zhang: I don't know what I'm saying makes sense. we can use the ones upstream or we can just not use the ones on fuel anymore and just use the ones locally, which is what this PR is modifying. There's an alternative. I think I commented that on the pr.

Mabel Zhang: I don't know. That's what I think that makes sense.

Woensug Choi: I was just facing. I think the problem that was this you.

Mabel Zhang: Yeah, that's right. Does it fix everything for you, or does it not fix it?

Woensug Choi: It did fix it.

Mabel Zhang: If they fix it, so maybe we're using the local copy. Yeah, I'm not sure. If it fixes it for you, that's good. Then I'm not sure what's linking to the ones Upstream, but I should probably look at this.

Mabel Zhang: I didn't see your new comments. Sorry, I'll read them. Later, yeah.

Woensug Choi: that's pretty new so.

Mabel Zhang: Yeah, this is two hours. Okay. I don't feel too bad now.

Mabel Zhang: Then I think that's most of the things in the done column. Thank you one suck. And the other big thing is we're talking about Ross to a new gazebo migration thing. I'll take two minutes on this.

Mabel Zhang: I don't know I wrote a lot but this is basically a plan of what? Has to be done and we usually recommend people to migrate one thing at a time piece by piece. if multiple people want to do it, we can open a new branch in this repo. That's a gazebo whatever Garden or whatever you harmonic or ionic branch and I lost two Branch but I would recommend doing Things separately Carlos. I talked to Carlos about this and he has a recommendations because actually Brian Bingham you guys migrated vrx from classic because people classic 2 news so he was recommending people to migrate the models first because they should be easy just uploading them to fuel

00:35:00

Mabel Zhang: that's the same thing we're talking about and then he said plugins are probably the hardest ones because there's specialized stuff. So I wrote All That here somewhere like These and upstreaming

this so that's the Gazebo side and then Ross two side. There's the Ross cheesy Bridge used to be the rust. Gazebo Bridge. That probably needs some testing and then the launch files. Roster has XML format. So people can use that so that's the gz bridge and then you are DF. Ross who now supports

Mabel Zhang: harsh some of the functions in SDF, but I think to get all the functionality especially for something like Marines stuff. There might be special features that Ross to doesn't support yet. So you might still have to Is your idea?

Mabel Zhang: And so I decided vrx here and then mbzerk also does Ross 2 and new gazebo? and then I have a list of order operations that are suggested. So, I don't know Brian do you have? things to add

Brian Bingham: Not particularly. I mean it is, we went round and round about when to do this and it was

Brian Bingham: it was not something to do lightly, to if you're using it right if you're using it like for vrx, we release it to a bunch of student teams and need to support that and so, it took better part of a year and a couple of people years probably to move it over like it wasn't maybe not that much but it was a significant effort just because of, not too much the Ross to stuff that's pretty simple but relatively it was more getting our folks who's of not for Carlos, but for our folks in PS was kind of their first big project in the new gazebo so that kind of mental model and the way that's architected was a big change.

Brian Bingham: pretty big refactor

Mabel Zhang: Yeah, that's good inside. So right now I think we don't have official roadmap for this and I'm obviously not staffed on this, but if there's Community interest

Mabel Zhang: We're open to help. So I put a help on a tag there. I think Evan you were looking into something similar.

Evan Palmer's Presentation: There was reading through the issues and stuff because I've been working on the blue simulation environment which had already switched to gazebo Garden. And so I was thinking I might be able to help with transitioning some of that stuff over since I had some experience with the new gazebo. So I haven't looked through any of the issues, but I had done. All right, I haven't worked on the issues, but I have been reading through some of those different things.

Mabel Zhang: I think the Main people on this right now. Probably one stock is thinking about it if we get more Community interest

Mabel Zhang: and if anybody has comments feel free to Ping me or reply to the poster. Just bring it up in this group. Do we have other comments on this post right now? If not, we'll move on to the rip.

Mabel Zhang: Okay moving on.

00:40:00

Mabel Zhang: Evan's, do you want to take over? you want to share your screen so that

Evan Palmer's Presentation: Sure, I can do that.

Evan Palmer's Presentation: Yeah, I can do that.

Evan Palmer's Presentation: Okay, can you see my screen? Okay, So Mabel and I've been talking a little bit about potentially proposing a new Ross enhancement proposal or rep. It's a little bit of a duplicate there for marine platforms. So the reason or kind of motivating factor for it was that some of the kind of notation and standards that are used within the Marine robotics Community differ from the conventions that are used by Ross. And so I wanted to kind of bring forward a potential.

Evan Palmer's Presentation: enhancement proposal to kind of outline what some of those different conventions are how should they be defined within Ross and what kind of standards for folks use and also to kind of explore if there's other standards that may be deviate from the existing Ross architecture and conventions. That's Marine robotics wants to promote so things like Differences in mapping or message types and stuff like that. So we're kind of looking at some of the existing Ross or reps that have been developed in the past and some of the things that seem most relevant and have been accepted are those for mobile robotics. and also former humanoid robotics, I don't have those pulling up right now, but those

Evan Palmer's Presentation: ultimately Encompass things like coordinate frame conventions and I guess mostly access orientations and stuff and coordinate frames that they want to use. So for things like humanoids those different coordinate frames can be pretty important for their kind of standards. And so I wanted to kind of put this out into the General Community to see if this is something that's spokes are interested in just to kind of help draw us all together with regards to difference applications and developments. That way we have a kind of standard and if so, then kind of get a sense of what kind of conventions people are interested in and if there's interest in interfaces kind of similar to what their robotics Community has done then maybe we could have some discussions regarding what those potential interfaces look like.

Evan Palmer's Presentation: So some of the things that I kind of was thinking about to help us get started. We're things like, maybe talking about coordinate frame conventions access orientations coordinate frames and then also map conventions, so Yeah, I guess I wanted to maybe open up by asking if there's any. Or what people's thoughts are on, putting together a rep if there's any interest in that. And yeah. I'll open with that question.

Evan Palmer's Presentation: Mabel what were your thoughts regarding putting together the route?

Mabel Zhang: Okay. I think you a little bit of context. I don't know about thoughts. I did ask Tully because he wrote the Ariel rep. So I put in the links for mobile humanoids and aerial and you will notice that what does it say inactive or just deferred and then humanoid them over actually active and the reason that the area was deferred. I asked to Lee he said basically it came out a little too late and other things like PX4 and whatever is Argueta already have their own standards and it was really hard to combine everything and have That's the final standard. Here's a new standard for combines the other standards.

Mabel Zhang: I also talked to Kim Maguire. She runs the aerial WG and she has a lot more context on that. I still need to rehear so Telly says he thinks it's worthwhile to have a marine rep and now might be a good time for it so that it doesn't end up like the area one like coming out too late. Markus

00:45:00

Markus Buchholz: Yes, actually this problem is a very relevant actually to our research activity in our criteria our University and in the marinas, this is not only them are underwater robots it's only also migrators and probably for my proposes and for what people are doing here no mind they are using so it's

sort of camera us and now my use the same if approach or conventions like for manipulators, this is the common standard and here at these universities and I don't want to push any kind of recommendations but

Markus Buchholz: only to share but normally across here at the University this convention which comes from manipulators since we are using a lot of cameras. We are using migrators so underwater when operators so this convention which comes from manipulators are income. so

Markus Buchholz: Yeah, thank you.

Evan Palmer's Presentation: Yeah. Thanks for the feedback Markus.

Evan Palmer's Presentation: any other thoughts regarding the rep whether or not it would be valuable.

Arjo Chakravarty: Just a quick thought is that we should probably as much as possible. Try to hit John through existing stop. especially for instance of manipulators and that's for instance. Since I think we should try to kind of this hitch on the existing rupees as much as possible everybody.

Arjo Chakravarty: That makes sense. I think.

Evan Palmer's Presentation: Yeah.

Arjo Chakravarty: on the 105 we should just refer to that or Surface vessels, but I can see the confusion device with Especially where our standard is then generally immediately.

Evan Palmer's Presentation: Yeah for And so one of the questions that I was kind of thinking about was As Audra just mentioned there's generally looking at Maritime systems if there's any sort of, deviations and how the standards are kind of represented. how should we capture that within a rep if that should be captured within this rep? And also, kind of just thinking about scoping so if this is intended for underwater platforms and not necessarily surface vessels, then maybe we can tailor it in one particular way. But ultimately.

Evan Palmer's Presentation: Defining some of those conventions might be helpful. And then also thinking about the broader impacts that that have in terms of, whether or not that will cause problems when incorporated or integrated into their house tools. And whether or not for how we should handle those certain changes Mabel, do you happen to know if any of those I guess convention differences might impact some of the other tools that move it for example are not to stack.

Mabel Zhang: I'm not sure what do you mean move it enough to because they're not underwater right? they wouldn't

Evan Palmer's Presentation: so I know that folks like to move it and not to for underwater systems. but I guess the question that I have is kind of more related to whether or not it's incorporating some sort of. Difference or discrepancy between the standards will have any broader impacts on how people are able to use some of the existing tools that maybe use the mobile robotics conventions.

00:50:00

Mabel Zhang: Yeah, it's probably best to talk to the people that are on those things enough to be Steve masinski and then move it would be picnic people.

Evan Palmer's Presentation: Okay.

Mabel Zhang: I was gonna point out that if people look at the aerial rep, they Define a lot of other things like messages and that could be a point where we bring other people into the conversation. I mean, okay, I think that the context were reps is just it seems to me that in most talking to a lot of people and having a lot of conversations which is where most of the work and then after you talk the writing is actually probably just writing The messages part I feel like Bristol mouth were saying that they are in the process of developing message types, and some of the conversation was really relevant to them. So probably it would be good to

Mabel Zhang: Get their input as so that's Beyond Corner friends and other things.

Markus Buchholz: Yes, thank you for giving me a chance. just for sharing her also information regarding stonefish and we got the guy here who stays behind the stonefish and maybe we can discuss about this case later. However, in stonefish you are using that an ID or how we call it and this is though what I would like to share.

Evan Palmer's Presentation: Can you elaborate that on that a little bit?

Markus Buchholz: So what I am I am not sure because yeah, I don't know.

Evan Palmer's Presentation: Yeah, sure.

Evan Palmer's Presentation: So I guess moving forward what are the time kinds of conventions or things that people would kind of hoped for and I'm Marine rep or we hoping just for Coordinate frames and access frames or are we hoping to incorporate things like message types and stuff like that.

Evan Palmer's Presentation: Mabel just mentioned one of the kind of major downfalls that the aerial rep had was that it was defined after things like, PX4 and sargu pilot had been around for a while. So there have been some sort of standardizations that had already existed and some sort of a divergences that had happened. And so the aerial robotics rep had a little bit harder of a time kind of establishing those conventions because they're already different standards. And so our hope is God's a unify those standards before there's major developments. Especially as companies start to work towards incorporating RAW support into their existing Solutions.

Evan Palmer's Presentation: I know that with blue robotics, they use artists and there are I think maybe one or two other companies that you've already said so there is kind of those standards that exist, but if there's other differences that people think would be valuable or That would be valuable that it might be useful to discuss those maybe incorporate those into a rep.

Evan Palmer's Presentation: but I think we're at times so Maybe it can move the discussion online or to a future date, too.

Mabel Zhang: So I pressed the wrong button. Intermitting.

Evan Palmer's Presentation: very good

Mabel Zhang: I think arjo had their hand raised.

Evan Palmer's Presentation: Of course.

Arjo Chakravarty: Yeah, I just say that I mean, I think you've seen a few people try to make messages standardized. It might be worth bringing those people on Florence is a record message. It seems to be there. And I feel that is the most value add because right now there's no eating way to really share. Just data collected by these things between different groups.

Evan Palmer's Presentation: Yeah, sure.

Mabel Zhang: Yeah, she's on my list to email. I'll put her name in there. Maybe she'll pay attention. I'm thinking of emailing a few people Laurel and zebras and mouth. Brian Bingham who had to leave he was talking about something that Carlos that they were talking about. I'll ping them as well and then. Maybe a few other people. I don't remember off the top of my head. But yeah, I think maybe the next step I can send those emails and see Evan.

00:55:00

Mabel Zhang: and then we'll see what people generally think about having a rep. And we can update the group. In the next meeting, how's that sound?

Evan Palmer's Presentation: Let's get to me.

Mabel Zhang: Okay, let's move from there. we are all the time. But once up do you think this can be covered quickly? Sorry.

Mabel Zhang: You're muted.

Woensug Choi: If you click that Flash here the screen now share sharing settings are not available right now. So if you see that, I'm trying to build a system that plugins the open source session. I think it's pretty much famous for the Digital World Generation kind of stuff. So if anyone has any experience or any interest in this I was always hoping to get her some opinions and ideas about this and I put a process of connecting all of those things, but I'm not sure there's any alternatives and these are possible. But just destroying during the idea that if anyone's interested because I brought multiple proposals on this. Without knowing whether it will work. So

Woensug Choi: does anyone here have an experience in this assume? No, not really. So. Yes. It's just implementing all of this. Cool digital twin data set into it. So I was hoping to connect that and run with Dave so that because those are all game engines doesn't do any physical calculations, but gazebo does so And the session was able to connect with Omniverse which was in video open source kind of stuff and Omniverse was able to connect with rods. it was in the Rose con. So I was thinking maybe using rods to connect all these things and make this cool visual.

Woensug Choi: when I read because in the unity, all those have prepared the food Preparatory, so it's not possible to support as an open. But if we connect everything like this, it might be possible. So just giving the thoughts. that's

Evan Palmer's Presentation: One dimension quick that one of my lab Mates is thinking about exploring the use of Isaac for underwater simulation benefits.

Woensug Choi: mm-hmm

Evan Palmer's Presentation: If it's helpful, I can put you in contact with him because he's been hoping to Do more reinforcement learning based stuff underwater which kind of motivated as expiration of Isaac,

but he hasn't seen a lot of underwater robotics things or Isaac. So I think you're definitely be interested to hear more about weight what you're talking about.

Woensug Choi: Right, right. I found one. So, thank you.

Woensug Choi: That's it.

Mabel Zhang: Okay, I'm gonna put a link to this. in here. I didn't know what it is. It's a Platform for 3D geospatial just for the recording. Okay, we're way out of time. So thank you everybody for coming. I hope this time zone works or Asia will do once a quarter. But yeah, that's all hope to see everybody next time and feel free to comment on rustic scores or Matrix chat or pink people. if you need It Whatever feedback, okay. Thanks everybody. Bye.

Markus Buchholz: Thank you. Bye.

Pratap Bhanu Solanki: Thank you.

Meeting ended after 00:59:38 🖐️