

DMC Chat log – September 23rd, 2015

Admin Lynn D: Looking froward to some great proposals from you guys!

[poll on DMC Open Source Maturity Model]

paul.fernhout: 15?

David Boswell: please feel free to add your thoughts in the poll to the left

paul.fernhout: Oh, DMC. I was thinking the entire global manufatcuring community.

Admin Lynn D: Yes. DMC. Global Mfr is lagging. We are here to change that!

paul.fernhout: yeah!

Admin Lynn D: :)

Admin Lynn D: Results seem to make sense for a multi-gen roll-out approach to digital mfr

Christopher.Piggott: The web site is DOME DOME DOME

Christopher.Piggott: leaving me with a lot of questions about the form of these community forums and such

andrew.kriebel: will you share the slides along with the recording afterwards?

David Boswell: yes, the plan is to share after

Christopher.Piggott: I wonder if people in this industry actually use EDI-856 to improve logistical flow of materials (as well as traceability)

Admin-Jim: if anyone wants to show us their smiling face here in the room, let me know and we'll enable your video and tile it under the classroom feed!

jami shah: Is there a revenue model for software providers making their apps available to users in DMC?

Admin PK: There will be a discussion around open innovatoin and business models in the afternoon session

Brian Schott: who is the ITAR cloud provider?

zina.benmiled: what is the vision for the future of DMC

zina.benmiled: is the integration between the different phases of the product life cycle being considered

David Boswell: zina.benmiled, the next session after the break will show you some good information about what's coming with the DMC

zina.benmiled: thanks

Rolf.Butters: awesome info thanks - any capability to do alerts -in extreme low bandwidth - such as event reporting - mal - cyber experiences?

David Boswell: that sounds like a good question to ask during the upcoming demo

David: Thanks

Hannes.Fuchs.xeBax: The

Hazim El-Mounayri 2: What role is GE going to play in the coming DMC projects?

Iraklis Anagnostopoulos: Does DMC provide any API for connecting with other programming languages/frameworks? (php, mysql etc.)

David Boswell: this last question was about how to contribute to the open DMC project. there's more information about how to do that at <http://www.projectdmc.org/documentation/contribute/>

Christopher.Piggott: If you're talking about DOME models then it's really java based but you can run models in a few languages ... as well as build them in tools like excel or matlab. It certainly would be possible to use one of those as a launching point to write your own models in any other language.

Christopher.Piggott: If your external model (e.g. you chose to write one in Ruby) took its input in the web service format defined by the project, then it could be pretty easy ... you could take in the same JSON objects used by the REST service, then spit out the same JSON response format that they use, and it seems to me that wrapping a model in any language of your choosing would be pretty easy. The down side in terms of collaboration is that in order to run your model locally an end-user would have to replicate your environment.

Katarina: That's true of the implementation currently available. We're working on providing additional plugins

Alex.Lee: can DOME be installed on a Mac OS? this link only covers windows install instructions
<https://digitalmfgcommons.atlassian.net/wiki/display/DMDIIDMC/How+to+check+out+and+run+DOME+code>

Christopher.Piggott: My strong advice is that you NOT write models in php.

Admin.Katarina.Struckmann: Yes, DOME can absolutely be installed on a Mac or Linux environment

Christopher.Piggott: I'm running it on linux now

Iraklis Anagnostopoulos: Thank you Christopher

Christopher.Piggott: I suspect though that if you want to run models (locally) that use MANY of the 3rd party execution engines (e.g. solidworks, unigraphics) you'll be forced to run it on a windows server.

Admin.Katarina.Struckmann: You can find instructions for installing it on Mac and Linux on the wiki:

<https://digitalmfgcommons.atlassian.net/wiki/display/DMDIIDMC/Digital+Manufacturing+Com+mons+Home>

Christopher.Piggott: I do have Matlab for linux ... maybe it would work there but I wouldn't swear that it would work, matlab on linux is ... let's say "funky"

Alex.Lee: Katerina, Christopher, thank you for clarifying that

Admin.Katarina.Struckmann: If you have any difficulty with the installation, please comment on the forum and we'll help you out.

Admin.Katarina.Struckmann: <http://www.projectdmc.org/community/index.php>

Christopher.Piggott: I don't quite get DOME yet so I will be doing that (asking questions on the forums). I just need to figure out how to formulate questions that don't reveal my current state of ignorance on the matter. I'm used to simulation environments like Ptolemy, Omnisys, Simulink

Christopher.Piggott: In those environments there's usually simulation "domains" and I don't know how DOME fits into that ... for example is there a framework for doing time-domain simulations

Christopher.Piggott: or is the scale more on the order of "big calculator" ...

Christopher.Piggott: I don't know if that makes sense to you folks or not, when I say simulation domain. Think for instance of simulating a vibration and how it manifests itself through a system. Typically that would be a time domain simulation: "Insert an impulse, then run the simulation for 10 seconds at a step size of 1 msec and plot the result." That would be a time domain simulation.

Christopher.Piggott: Or consider a network, where you have 1000 nodes, and each one has a .01% probability of generating a packet. That would be an event-driven or discrete event domain simulation.

Christopher.Piggott: I don't get the idea that DOME does or is for that

Alex.Lee: Christopher, you made a good point about being required to run DOME on a windows server. NX/Unigraphics is available for the Mac OS but they are using X11

Alex.Lee: it might be similar to your experience with matlab on linux

Christopher.Piggott: I have been trying to figure out how some of these tools - like nastran - will work with dome,

Christopher.Piggott: and even solidworks

Christopher.Piggott: I know for instance I could have a solidworks model of a widget I'm trying to machine

Christopher.Piggott: and I could parameterize that model in such a way that I could make a DOME model that takes as input "length, width" ... run it through solidworks ... and have solidworks provide me with manufacturing data like for instance maybe volume of material required

Christopher.Piggott: I *think* that's the way DOME models are supposed to make use of those tools

Martin: for anything that we upload/design with UILabs, if we want to "Print" what we've designed, where is the "Printer"

Christopher.Piggott: Personally the one I think is missing is something that lets you run parameterized manufacturing models ... like what you'd do with MasterCAM or one of its competitors ... because what would be really useful would be to be able to put in a parameterized model and it gives you information back about the tool paths, # of holes, estimated time to make it etc

Christopher.Piggott: I saw someone that joined here was from MTConnect. I see a lot of opportunity there, too, if people are willing to participate / share their data.

Alex.Lee: Christopher, since you are running DOME in linux, do you think you could use a Raspberry Pi as a server

Martin: for anything that we upload/design with UILabs, if we want to "Print" what we've designed, where is the "Printer"

Alex.Lee: Raspbian, or some other distro?

Christopher.Piggott: It would be so much fun to have MTConnect deliver production data into a model that predicts reliability ... and uses the MTConnect data so that the model continuously improves itself

paul.fernhout: I feel it likely that we will see a lot more JavaScript-based simulation tools in the near future (like using asm.js and three.js). That may help with the cross-platform issues.

Christopher.Piggott: I am running DOME on an Ubuntu 14.04 desktop. I think it would run on a RPi hardware without too much trouble, though by default you're going to end up with OpenJDK rather than an official Oracle JVM

Christopher.Piggott: I SUSPECT that it will run just fine on OpenJDK but haven't tried.

Admin.Katarina.Struckmann: Martin, can you clarify your question about the "printer"?

Christopher.Piggott: If I had to guess, though, I'd guess it would be pretty slow on an RPi, especially if you're trying to start the environment up thorough ant the way they do it with their instructions. Doing it that way just increases the pressure on a memory-starved system, as there's another ant process running in the background, doing nothing but waiting for DOME to complete.

Iraklis Anagnostopoulos: Can DMC be used for simulating processes and services? For example, an assembly line as an entity

Admin.Katarina.Struckmann: We've had success running DOME on Ubuntu 14.04 with OpenJDK so far

Christopher.Piggott: paul.femhout: honestly dome doesn't care, the cross platform issues I see are with the 3rd party engines that run the models, like nastran, UG, solidworks, etc. Even excel, because I doubt it works with LibreOffice and the like.

Martin: so if I designed a PHYSICAL thing with UILabs, how do we "Print" it ? Can we have it "Printed" in UILabs itself ?

Christopher.Piggott: You want them to run a 3D print job for you using their equipment, is that your question?

paul.femhout: Yes, those sorts of engines (or open source variants) may end up being browser-based just because it is so easy to surf to a web page and see a model working.

Christopher.Piggott: Oh, right. Yeah, in that case you would be calling the model but it would actually be running remotely, on some operating system appropriate to whatever that model's underlying computation engine may be

Christopher.Piggott: You may all regret telling me about these forums. :)

Martin: Christopher, what's the benefit of us putting our IP/Designs on UI Labs but CANT have it manufactured ?

paul.fernhout: Chris: Yes, Amazon does that with Android app emulation, but people could run stuff in the browser too depending on the CPU demands or if browsers improve multi-core support.

paul.fernhout: yes, video OK here too

David Boswell: great

Greg.Adamson: Good now

Christopher.Piggott: Martin: I have no idea, I'm pretty new to this too :)

christine.nguyen: Thanks for that discussion. I haven't used DOME and had quite a few questions... but this discussion certainly helped me understand a bit better.

Admin.Katarina.Struckmann: Excellent! We're glad the chat is useful

Martin: Thanks Christopher, this is what many of us understand here in Chicago and we dont see how UILabs can ask people to place their IP on their servers WITHOUT ever being able to get a result out of it

Admin-Jim: @Christopher.Piggott: I regret nothing!

Christopher.Piggott: Oh, good. I read something about jquery being part of the standard web platform ... I wanted to raise a complaint about that :) I just need to locate where I read that.

john.feusi: It looks like they are using angular which comes with jqLite

Christopher.Piggott: <3 <3 <3 angular

Christopher.Piggott: Just wait ... angular2 has no more jquery

Christopher.Piggott: angular2 is *love*

Christopher.Piggott: (sorry, that was way off topic)

paul.fernhout: Chris: Check out Mithril too.

Christopher.Piggott: I will. My argument with the jquery approach is not that I hate jquery per se, it's more that the whole idea of direct DOM manipulation leads to pollution of MVC/MVP patterns -- badly -- and almost universally leads to less testable, less reusable software..

paul.fernhout: Yes, see though: <https://lhorie.github.io/mithril-blog/lessons-learned-from-angular.html>

Christopher.Piggott: OK so what they are showing RIGHT NOW

Christopher.Piggott: This is basically an example of how to run a DOME model from the web interface, correct?

David Boswell: Yes

Christopher.Piggott: Do I get this interface if I run the server, e.g. "ant run-server" ?

paul.fernhout: And I expect that step will eventually run indirectly in the browser in many cases...

Christopher.Piggott: I run the server, and it tells me two things ... that it started hsql on port 7792 (which I don't care) ... and it tells me that it's listening on port 7795.

paul.fernhout: s/indirectly/directly

Christopher.Piggott: So I went to <http://localhost:7795/> expecting to get something *like this* but that's not the case.

Christopher.Piggott: paul.fernhout a completely ES2015/HTML5 based client that just runs remote models would be totally awesome.

Admin-Jim: That's the raw server, which you can connect to with the DOME client, but doesn't have much for a default interface

paul.fernhout: Yes, I imagine it will be a hybrid. Sometimes the models will run in the browser, othertimes they will run elsewhere in a VM with streamed video.

paul.fernhout: Or in some cases, not video but HTML and JavaScript reporting on heavy numeric calculations elsewhere.

Admin-Jim: try running the ant dist-war command and then deploying the resultant war file to a tomcat server

Admin PK: beyond the workshop, please go to projectdmc.org to enter any further questions and comments you may have on the DMC

Iraklis Anagnostopoulos: Can DMC be used for simulating processes and services efficiently? For example, an assembly line as an entity.

Admin PK: if you develop the relevant models they can be hosted and run on the DMC

Hannes.Fuchs.xeBax: What's about security. Transferred Data are very sensitive and they content intellectual properties.

paul.fernhout: Nice explantion of models runnign remotely!

Iraklis Anagnostopoulos: Regarding the last Q&A from john.feusi (real-time monitoring), can you please elaborate more on how DMC can be integrated as a technology to that point. How can DOME models be used in that way?

Christopher.Piggott: I can give you one example out of my own head. Say you develop a DOME model that tries to predict tolerance changes as a tool wears out or deviates from its initial calibration. You could design a DOME model to compute that, but if you had some real-time data -- for example, based on laser inspection of the product -- then you could use that information to make the model improve itself (and become a more accurate predictor)

Christopher.Piggott: I see a TON of ways like that to use real-time data so that you have models that improve themselves and get better and better the more they are used (and fed info)

Bala Deshpande: what is DOME?

Bala Deshpande: is it a physics based modeling system?

David Boswell: Bala, DOME stands for Distributed Object-based Modeling Environment and there's more info about it at <http://www.projectdmc.org/sdk/>

Admin.Katarina.Struckmann: Native DOME models are Python scripts, but DOME has plugins for approximately fifteen other programs such as MATLAB and Abaqus

Christopher.Piggott: Is it Python or is it actually Jython?

Admin.Katarina.Struckmann: Jython

Christopher.Piggott: I suspected :) and I'm delighted you answered that question so quickly

Admin.Katarina.Struckmann: You're welcome

Christopher.Piggott: That ties in with the question that someone asked earlier about javascript. If it's jython, then that means it's using the jvm scripting engine, which means it would be trivial to extend it to be able to make models on the javascript ScriptingEngine as well ... maybe that's some place I could contribute.

paul.fernhout: There are some different tools to compile Python and Java to JavaScript, so running some existing models (especially ones without much of a GUI) directly into the browser might be possible.

paul.fernhout: In order for DOME etc. to scale easily, it could be good to push as much to the client as reasonable to share the computing load.

paul.fernhout: In particular, I'm thinking about educational uses, where millions of engineering students might want to use the system.

Christopher.Piggott: That's true but it makes it a lot harder for you to protect proprietary models than the current REST based remoting architecture.

Christopher.Piggott: Do we get to watch everybody eat?

paul.fernhout: Is anyone else, especially admins, seeing the chat log get truncated with some sort of HTML fragment at the top?

Alex.Lee: Katarina, is there a link already setup for viewing the recording later or will it be posted on the forums later?

Admin PK: Hi Paul, we do not see the html fragment you mention

john.feusi: My company built a real-time data monitoring tool as a side project. We think adding a couple features and doing some integration might make for a good project proposal. I know this is kind of last-minute but if anyone in here is interested in partnering with us to do a project proposal on that you can contact me at this temporary email non865766@gmail.com

paul.fernhout: PK: Thanks. The transcript should start with "James Barkley: Welcome" but mine does not anymore. Maybe just a local browser thing

Alex.Lee: great exchange of ideas everyone! i will have to catch the recording later

tim.murtaugh: My chat transcript is missing the early messages as well. I hope the chat transcript will be available in its entirety after today's session.

paul.fernhout: I have a text copy of the early messages (mostly just intros and comments about sound) if the admins end up needing it (but I assume they probably have other records).

David Boswell: sorry about running a little late -- we're getting started again now

Sagar Kumar - Honeywell Aerospace: The slides look like it is cut off a bit

Dazhong Wu: Can the review process be more transparent?

chris.frasier: bottom bullet is not showing up on webcast

Dazhong Wu: for example, would it be possible for return reviews to proposers?

Admin.Katarina.Struckmann: We're looking into it. The bullet is "Proposals should identify a diverse and well-balanced team"

Admin.Katarina.Struckmann: The slides will be made available.

Admin.Katarina.Struckmann: "Letters of Commitment" is the last bullet on this slide.

chris.frasier: thank you

Admin.Katarina.Struckmann: Cut off on this slide: "- provide clear Cost Realism Tables - why 4 licenses? - DMDII projects require minimum 1:1 cost share"

paul.fernhout: thanks for repeating the question

Admin-Jim: Here's the link Katie was referring to:
<https://www.surveymonkey.com/r/FGM5ZXD>

Admin-Jim: You can use this to provide information that may be helpful for others looking to team on a proposal

john.feusi: Thanks

mklove: If anyone is interested in Membership at DMDII (<http://dmdii.uilabs.org/membership/benefits>), please feel free to contact me directly: Mary Kate Love - marykate.love@uilabs.org

Admin.Katarina.Struckmann: Remote participants: we'll be hosting an online breakout session for you

Admin.Katarina.Struckmann: We'll provide a link soon

Admin.Katarina.Struckmann: <http://workopen.org/p/DMC-workshop-breakout>

Admin.Katarina.Struckmann: Please wait for Alex to join you to moderate the online breakout session

Admin.Katarina.Struckmann: Please head to the ether pads and participate

Admin.Katarina.Struckmann: the link once more is

Admin.Katarina.Struckmann: <http://workopen.org/p/DMC-workshop-breakout>

Christopher.Piggott: Is this like a shared document that we can all work on together? Is that the idea?

paul.fernhout: Any reason NIST is not listed under government?

Admin.Katarina.Struckmann: yes the ether pad is shared and online community can participate in the same activities

Admin.Katarina.Struckmann: No reason; we'll add it!

alex 33: Online Folks we do this part by scrolling down the page to the second section

Martin: Anyone know briefly what Darpa is looking for ? I'm interested in both Darpa and NIST

alex 33: What digital manufacturing problem can the DMC help you solve?

Martin: Outstanding question

alex 33: What audiences in the DMC community would you like to collaborate with to help solve this problem?

Martin: What happened to the audio ?

alex 33: The small groups break out and then will come together to share their sessions

alex 33: Online people are participating at <http://workopen.org/p/DMC-workshop-breakout>

Martin: okay, I gotta research this more and thank you for the links

Martin: Thanks I'm following through now per your breakout link

Christopher.Piggott: paul f: we should talk, because we're the Golisano Institute for Sustainability and we're really interested in the subject you wrote about ... cepasp@rit.edu

paul.fernhout: Chris: cool, thanks! Will do.

Christopher.Piggott: Are "integration models" models-of-models, where I can take say a transformer model from one vendor and a motor from another vendor and put their two models together in my own "model of the system" ? Is that the intent of these "integration models" ?

alex 33: Yes models may be linked together and form larger ones

Christopher.Piggott: Then does it make sense that we need to develop some kind of interface that says "If you are modeling a transformer, it should have these parameter inputs, and these outputs, regardless of manufacturer" (using transformer as just a rough example) so that someone would have the ability to say "OK I see how that works, now let's try it with vendor xyz's transformer and see how that compares" ?

Christopher.Piggott: i.e. do we need to develop some kind of collaborative way for defining "Here's what a transformer looks like" "Here's what a motor looks like" "Here's what a pulley looks like" so that there's some uniformity, so that it's feasible to build a "system level" model and be able to swap in/out various components ?

Christopher.Piggott: I know that's a big thing to ask. I do a lot of work in the HVAC industry, and getting everyone to agree what the object model for an "Air Handler" looks like can be like herding cats.

Christopher.Piggott: What this guy is asking are all the same questions I had when I first learned about this

Christopher.Piggott: This meeting is going quite a ways to start clearing the fog, but still a way to go

Admin.Katarina.Struckmann: Remote participants, thank you so much for attending. We're going to be installing on site later today. If you encounter any problems, please ask in theprojectdmc.org forum and we'll get back to you!

Martin: Are there ANY PCB manufacturing/assembling machinery available on the "UILabs Shop Floor" ? We manufacture PCB boards

paul.fernhout: thanks admins!

Martin: Are there ANY PCB manufacturing/assembling machinery available on the "UILabs Shop Floor" ? We manufacture PCB boards

Martin: ?

paul.fernhout: Martin: there are some descriptions of equipment here: <http://dmdii.uilabs.org/the-institute/facility/demo-factory>

Admin.Katarina.Struckmann: We're closing the webinar in a few seconds. Please direct any additional questions to projectdmc.org. Thank you for attending!