4 Sep, 2018

Robert Trzeciak

Program Manager

Northrop Grumman IS

468 Viking Drive

Virginia Beach, VA 23452

757-498-5544 work

757-635-2628 mobile

**Progress Report – 1 Aug 2018 – 31 Aug 2018**

Contract Number: HSHQDC-06-D-00022

Contract Number 7500097279

Order Number: HSCG23-07-J-TED150

Task Order – Performance Work Statement (PWS) 1.12

Attachments: (1) SAROPS subcontractor financial reports.

1. **Lots of Sprints and Points meetings.**
2. **Wrote up specs on xml exchange. In particular, seeds for RNGs should be 64 bit, and lat/lngs should be 7 digits after the decimal point.**
3. **I got ready to flip RNGs’ seeds to 64 bit. Can’t do that until Judy can read the 64 bit seed since she must read it, store it, and write it back to me for continuing optimizations.**
4. **Huge lift was adding all of the special properties for pre-distress. Melody noticed that I was missing one; halfLifeForPreDistress. I doubt that that will ever be used, but I now have it in there.  
   An example; A “currentsUvGetter” had to be able to provide (u, v, dU, dV) for any (time,lat,lng), and this has been this way from early on. Now it must be able to provide (u,v,dU,dV,preDistressDU,preDistressDV) for any (time,lat,lng). Just unwinding this trail through the code was time-consuming (but I don’t think too error-prone). Whereas before, I simply had 0=u,1=v,2=dU,3=dV, the added complexity made me nervous enough so that I now have a set of named constants (actually, an enum) to keep track of all of this. I BELIEVE that the only place that I actually use the preDistressDU, preDistressDV is when I’m building sail segments for a sailboat voyage. But by changing the API, I was at least forced to go through the code and check. Also, the only place where half-lives are checked for preDistress environment is the same place.**
5. **Looked at a case involving swirling currents to ascertain why it wasn’t spreading.**
6. **Looked into SLDMB’s and their usage. I need a function that takes 3 independent variables time, lat, and lng. This is much like saying that I need to be given a number for each (x,y,z) in a cube. However, I’m only being given a number for each (x,y,z) on a path. It took a while to get that point across, but Jack’s write-up, distributed on 9/4/18, captures what I had been trying to say. I had communicated this idea by using my gui and an animation (unavailable on SAROPS) of the currents that I’m given. Also, I provided ascii dumps of the NetCdf files I was given. My understanding is that I’m on the only one who can do that.**
7. **I finished the “writeOcTables” specification and implementation. The final result kind of overrode almost everything in the Jira entry.**
8. **Along the way, I resurrected the code for an alternate set of properties, and specified what should be done to trigger it, and demonstrated that it was working. Melody also asked me how to verify its functionality and I went over that with her. I wrote the code to use a file of overriding properties file about 13 years ago and it’s nice to see that it still works (almost, needed a few tweaks), and that others recognize the need for it.**
9. **While working on writeOcTables, I was cleaning up the code that writes the Particles file. An undocumented requirement (and, indeed, one I didn’t know) was that Judy requires what I thought was a field used only by me. This is a text field that stores the XML. Even more undocumented was that Judy’s code that reads this XML cannot handle comments within that XML (i.e., <!--… -->. I got those cleaned up.**
10. **Rob Wilson found and I fixed a serious bug on up/down sensors. Essentially, I was looking the wrong way.**
11. **Wrote up and refined even more the “CompareKeyFiles” program for Melody.**

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| **Name** | **Activity Worked** | **Hours Worked** | **Hourly Cost** | **Total Cost** |
| Kratzke | Coding/Doc/Travel | 218.62 | -- | -- |
|  |  |  |  |  |
| **Totals** |  | 218.62 |  |  |
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