1 Mar, 2019

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**Progress Report – 1 Feb 2019 – 28 Feb 2019**

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. **Month started with some SS tweaks and fixes, resulting in a new installer (2/1/19).**
2. **Added the restraint that for VS and SS, the optimizer restricts itself to first-turn-right. Implemented that by adding some Sim.properties so that it can be reversed without changing the code.**
3. **Worked on the “distinctDetechtionThreshold (ie “5-minute rule.”). Modified it in Sim.properties so that it is now a characteristic of the SENSOR rather than a global value. This, depending on further experimentation, may all go away anyway, and the distinctDetectionThreshold will simply be the duration of the 2nd leg. Also, until that change is made, I did change the number of mins from an int to a double.**
4. **Cleaned up the code to remove the “frozen\_box” option of initializing an SRU. Nobody ever used it and it was my idea to start with. Then a long discussion with Jack indicated that that’s exactly what we should almost always use, but by then it was too late; frozen\_box was gone. However, I implemented a “stand-in:” given a pattern, I have code that determines if it is a PS/CS, VS, SS, or none, and the parameters for the PS/CS, VS, or SS. Then I treat the pattern as I treated frozen\_box before. I had 2 bugs in my “glean the patternKind” code, but it seems to be working now. The effect is that I if can not deduce a patternKind, I do not have a track-spacing, and I will also compute the exclusion area differently. In general, it will be slightly larger and that can give overlap warnings on subsequent optimizations. For example, if something is called a VS in one run, there will be no overlap. “Import” that same pattern into the next optimization, and if it is treated as a trackline, the pos won’t change, but there will be an overlap, and it’s possible that the entire solution could be thrown out. Jack wasn’t happy about the “glean the patternKind” approach, but has grown to accept it.**
5. **Another “hangs on SS” bug was reported and fixed.**
6. **Worked with Judy on writeOcTables. In fact, there was a lot of discussion about the ocTables, but I don’t recall changing any code; just answering questions.**
7. **Solved a couple of problems related to the use of alternate Sim.properties files. Jack needed some help using it, and John Squires had trouble figuring out why they were not taking effect. In the latter case, I called John and helped HIM solve the problem; he has to put the alternate file somewhere where Sim can read it. Simple fix, not so simple to figure out what was wrong.**
8. **Answered Philip Myers’ concern; he was getting identical distributions, except for scale. When I first heard of the concern, I called Mr. Myers and we discussed the problem. After looking at the cases of concern, I suggested the cause and an experiment. He ran the experiment, and the issue was resolved.**
9. **Tested SLDMB with Judy; it was interesting that the vectors seemed to depend only on position and not on time.**
10. **Discussions on SBV, in particular, hove-to.**
11. **Worked with Art designing new SBV features. Sent him sample Sim.properties for SBV, and explained them. He used that as a template to define what he needs for sea-anchor/drogues.**
12. **Worked with Jim explaining single-leg PS/CS patterns. It’s interesting that fitting EPL=10.2 to a 10x10 results in a single leg of length 0.2 inside of a box that is 10.2x10. Counterintuitive, but correct according to the rules we’re given.**
13. **Did Mobile Bay SimLand.**
14. **Answered questions about multi-sensor. Needed to review the input to my computeSweepWidth and how to use it.**
15. **Looked into “Lower NetGain” concern. Several possible explanations, and no additional work.**
16. **Excess Effort Problem. This was a bug. It showed up on a case with 5 previous SRUs, a 6th that was placed with a GetInitial, and that placement overlapped 2 of the previous 5. This bug is triggered only when multiple previous SRUs are overlapped, and multiple previous SRUs are not overlapped. It’s rare, but it was a bug. The solution (which I coded, but the code had a bug) was the following:  
    a. During the 1st major move, do not move any initially placed SRUs.  
    b. Until we have a complete feasible solution, do not move a solution that is equal to its PatternVariable’s initial solution.  
    The installer of Feb 28 seems to have fixed everything on this problem.**
17. **Had some problems with Advanced Installer; suddenly my .msi file was twice as big. My mistake; I had accidentally unchecked a box. I ran this down by using git to retrieve an earlier advanced installer script.**
18. **Wrote up BuildSimLand. This turned out to be a major undertaking. I have always run BuildSimLand from within my Integrated Development Environment (IDE, in this case, Eclipse). I have been trying to put a simple program “BuildSimLand” into the installer (the installer can install multiple programs, and I also install “CompareKeyFiles,” in addition to the main raison d’etre SimWebServer), but BuildSimLnd didn’t work. There were a few issues that I got ironed out, and I modified the VM parameters. I then packaged up a sample data zipfile, wrote a script that uses the installed exe file, and suggested others try it out. It worked; Jim did that, producing the Mobile Bay SimLand from the Jarvis Island SimLand, which is the SimLand before Mobile Bay, the LALB SimLand from Mobile Bay, and then two versions of Bonneville Dam from LALB. This demonstrated building one SimLand from another, and the final Bonneville Dam demonstrated building SimLand from scratch. All 4 of these were run with the script that is included in the installer.  
    The bottom line is that if somebody can use Google Earth, or some other kml generator, that person now has documentation and examples for building future editions of SimLand.**

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| **Name** | **Activity Worked** | **Hours Worked** | **Hourly Cost** | **Total Cost** |
| Kratzke | Coding/Doc/Travel | 173.76 | -- | -- |
|  |  |  |  |  |
| **Totals** |  | 173.76 |  |  |
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