01 Dec, 2014

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 Nov 2014 – 30 Nov 2014**

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. **SAROPS Systems Component Services Tasks**
   1. **Submitted installers with the getLogOddsMaxPd function in the C++ library. Jim tested it and had some problems. So I called him and walked him through some hand-verification of his test case. Basically, this is an easy problem since it boils down to finding the maximum value of a quadratic; check the endpoints of the domain and –b/2a. This is what we all did in 8th or 9th grade. The reason it’s in my code is that the pd value must exceed a parameter that is in my code in order to be considered non-zero. For consistency’s sake, it’s better to have that parameter in one place. After walking Jim through how to evaluate the function at 0, he saw that the value was correctly computed. But the reported sweep width was strange so it appeared to me that the ap0 and a2 were reversed. I called Art to verify that ap0 was the constant term and that a2 was supposed to be the 2nd degree term, and then ASA to verify that that’s what they were doing (also that the assumed units were nmi). They found that error and fixed it. It was fun to be part of the team that found the error.**
   2. **Finished “spiral-1” of improved planner, but much of this is not paid for, tested, or integrated back into SAROPS. In particular, I haven’t updated the eval reports. The internal representation of a planner solution has changed a great deal and so I cannot generate eval reports from that. Nevertheless, Idemo-ed it to Jack with a case that involved 3 SRUs and 2 modes. The results for this one case are better from an operational point of view and a POS point of view. It takes longer for the first solution to be generated, and then there’s much less dancing.**
   3. **There was a problem with Judy’s POS report that I think I was responsible for. I got Judy, Jim, Jack (alliterative!) on a conf call and we hammered out where in my reports Judy should be picking up numbers. It turned out to be very simple; my Plan\_Results file has 4 blocks and her external report should just be coming from the “Landed\_Adrift” section. Furthermore, I must have found a bug in mid-October because my report seemed to be correct in my Oct 23, 2014 release, but not the Oct 8, 2014 release. It was one of those minor updates that resulted from the never-ending scrubbing and re-examining of the code that implements algorithms. In this case, I found a bug before it was reported.**
   4. **Worked on an approach to handling DNC data. Hope to demo this on Dec 18. In particular, I hope that I can have one of the 29 sections of DNC data “GSHHS-ized.” Many problems arise with polygon data; correcting crossings and simplification are the main ones. Wherease the current version does this on a polygon-by-polygon basis, a new approach is necessary for the increased sizes of the DNC data, and my approach is “longitude-strip-by-longitude-strip.” Currently I’m trying to do this by breaking the problem into strips that are 1/240th of a degree.**
   5. **Off from noon, 11/24 through 1/1/2015.**

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| **Name** | **Activity Worked** | **Hours Worked** | **Hourly Cost** | **Total Cost** |
| Kratzke (New Contract) | Coding/Doc/Travel | 72 | 261.27 | 18811 |
| Stone | Doc | 0 | 223 | 0 |
| L White (Tech Writer) |  | 0 |  | 0 |
|  |  |  |  |  |
| **Totals** |  | 88 |  | 18811 |
|  |  |  |  |  |