3 Sep, 2013

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**Progress Report – 1 Aug 2013 – 31 Aug 2013**

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. **Activities completed (Off one week at the beginning of the month):**
      1. **Answered questions about Ideal and Normal from both Jack and Art.**
      2. **Chased down another non-bug. Again, speed=-2 kts was being given to me. This time, from Young in Beta 9.**
      3. **Cleaned up some debugging code that was producing some misleading pictures. RegTest3 in Planner appeared to not be doing a good job, but it turned out that the display was slightly off. Also, looking at RegTest3, my display was showing the probability distribution of all of the particles whereas the SRUs are focusing only on the distress particles. These two notions explain the questions I had about this test last month.**
      4. **Working on improving Planner (1). Revising the sampling technique to use stratified samples. Seems to help. The test is if the non-regression cases that I have do as well at the end since that is not subject to sampling. They seem better and get there faster and better approximate the final POS in the output file.**
      5. **Working on improving Planner (2). Modifying the way Planner does a “jump.” Watching planner in the 6-year-old interactive gui, I’ve seen a lot of repetition. This is because every jump is actually trying to do something “smart” and “smart” does not take into account previous attempts. But sad to say, 10 seconds into the process, the “smart” thing to do now is the same as the smart thing to do before and hence repetition occurs. I’m trying a more “random” approach. The “randomness” is implemented by choosing a different and smaller sample of particles to base the new solution on. The smaller sample is likely to produce more dramatically different starting points. I’m also using a random ordering of the SRUs to place. The first 2 multiple-SRU cases I tried it on (and these have to be multiple-SRU cases for anything interesting to happen), seem to show promise. On my simple 3-SRU problem, I get higher POS values faster. The stratified sampling technique has an impact only if there are many scenario/object type combinations. Hence, I am allowing 1K in my sample for the first combination, 500 for the 2nd, etc..**
      6. **Put MBeta in and tested it. Works fine in 1.5. It’s *in* 1.4, but has not been officially tested. Can be triggered (in 1.5) by submitting any 2 of the 3 parameters “sweepWidth,” “maxRange,” and “probability.” In 1.4, one must submit maxRange and probability. Worked fine (in 1.5) in two of my nonRegression planner cases.**
      7. **Using tech support at Metron, I got the SQL Server installed and hope to finish the 1.5 installation.**
      8. **Identified a bottleneck in Simulator. Without completed searches, the most time-consuming step suddenly became preparing the particle file. Sped that up to where it was before, so that it is not a bottleneck.**
      9. **Tracked down a problem with reported overlap. The problem was that a pattern tag was given to me, no waypoints were given, and I noted that in the err file. The response to that was a reported overlap exception.  
         However, while pursuing this, I noticed that I DO have a problem computing overlap, but it occurs only within my own gui. Fixed that.**
      10. **Noticed a bug in the calculation of initial configurations. The algorithm is supposed to always keep the set of SRUs clear enough of each other so that overlap can “probably” be cleared by simple adjustments. That was not always the case.**
      11. **Likewise, there’s a problem that some initial configurations do not adhere to the width/length threshold. This resulted in a null pointer exception. Chased that down and cleared the problem.**
      12. **Produced beta10. Included going through all non-regression tests and rebuilding the common waypoint generator dll. There was a bug introduced into that that I cleared up. The problem was simply that another small java class had to be included in the jar file that is part of the dll. Talked through the use of the parts with Fred and Jim.**
      13. **Removed dialog allowing user to select install dir.**
      14. **Participated in conf call regarding radar curves and substituting mbeta curves for them.**
      15. **Noticed a potentially significant bug. In the NonRegression planner test RegTest5, POS is very low because some of the SRU/ObjectType combinations are “inActive.” This is, I think, one of those seldom-loooked at cases and I didn’t look at the results file carefully enough. I’ve chased down the bug and will fix it in early September, hopefully getting it into the Sep 5 build.**
      16. **Finished installing 1.5 beta8 and 1.5 beta10. Finished writing up a “how-to” for the wiki. It is really just a baseline version of this guide, and it will be modified by other members of the team.**
   2. **Travel completed:**
      1. **None**
   3. **Upcoming activities scheduled:**
      1. **Continue to improve Planner and fix the one bug that I’ve noticed, getting ready for the Sep 5th drop. I still plan to investigate the following problem (Note that the other problem from last month has been cleared up):**
         1. **A tiny mismatch between alpha and bravo POS values.**
   4. **Travel planned:**
      1. **None**
   5. **Concerns or recommendations:**
      1. **None**
      2. **Will be off for 6 days of PTO.**

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| --- | --- | --- | --- | --- |
| **Name** | **Activity Worked** | **Hours Worked** | **Hourly Cost** | **Total Cost** |
| Kratzke (New Contract) | Coding/Doc/Travel | 128.5 | 255.16 | 32788 |
| Stone | Doc | 0 | 223 | 0 |
| L White (Tech Writer) |  | 0 |  | 0 |
|  |  |  |  |  |
| **Totals** |  | 110 |  | 32788 |
|  |  |  |  |  |