30 Jun, 2016

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**Progress Report – 1 May 2016 – Jun 30 2016**

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. **Crash involving LKP + DR in 2.1 was fixed.**
2. **Loiter/Hazard interaction was fixed; at least I identified something wrong (the time intervals involving the loiters were not being fed to the distressTimeCalculator)**
3. **Progress on planner; BirdsNest algorithm was refined, and both “skinnifying” and “pushApartAcross,” alternate strategies for clearing overlap when the buffering is applied, are implemented. Skinnifying is to reduce the number of search legs, making each one longer and hence the box “skinnier.” “PushApartAcross” says “move them apart, but restrict the movement to being perpendicular to the (common) direction of the first leg in the Srus of the BirdsNest. Both produce nice looking when boxes, but not necessarily with higher POS than a single box. This should be good when the buffer is relatively small compared to the track spacing. Also, I simplified some of the “regional optimization.” The BirdsNest algorithm splits a common area into regions for each Sru, and each region is optimized by that Sru. That optimization was taking too long.**
4. **Rounding the Srus is back in, and I believe it’s better. Since I am still working with “perfect boxes,” and rounding introduces an impossible situation, I scale the speed (usually very slightly) to maintain the duration. I put the scaling factor into the output file. This will need some testing. I clear overlap that might be introduced by rounding (perhaps I should not, and just leave it there), but my test cases haven’t triggered that aspect of the code.**
5. **Worked with Jim on the pattern maker; the inconsistency with rounding might be causing confusion; hence the re-work of the rounding. Still work to be done there.**
6. **Put an overlap announcement into the status report, but haven’t tested it that well.**
7. **Made the 2.03/204 fix.**
8. **Found a conditional POS bug or problem; I was putting “—“ in when the denominator is 0. That should still be fine, but it was causing downstream problems. I got a case and identified the problem.**
9. **Similarly, there was a 2.02 question that arose about why particles were drifting across land; I identified that the AOI was too small.**
10. **Coded a strategy for eliminating first-turn-right bias. Now every box is checked for the 4 possible ways of starting a pattern and having the same box, and the best box is selected.**
11. **IPR, where I tried to explain some of these ideas.**
12. **I’m off the first week of July.**

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| **Name** | **Activity Worked** | **Hours Worked** | **Hourly Cost** | **Total Cost** |
| Kratzke | Coding/Doc/Travel | 135.5 | 282 | 38211 |
| Vergamini | Coding/Doc/Travel | 0 | 282 |  |
| Stone | Doc | 0 | 223 | 0 |
| L White (Tech Writer) |  | 0 |  | 0 |
|  |  |  |  |  |
| **Totals** |  | 135.5 |  | 38211 |
|  |  |  |  |  |