|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Run at** | **Priority** | **Notes** |
| Get data from sensors, apply calibration | 400Hz | 1 | Get data from interrupt DMA, start next conversion |
| Process user (and debug) commands | (when rx interrupt occurs) | 2 | Does this need to output the data from get data acquisition? 400Hz? |
| Calculate cal data (temperature data) | 1Hz | 3 |  |
| Calculate angles (nav) | 200Hz | 4 |  |
| Kalman error calculation,  Also calculate position and velocity | 100Hz | 5 |  |
| GPS processing, correction calculation | 1-10Hz | 7 |  |
| Heartbeat | ~7Hz | 14 | This only toggles a line on the test board, allowing us verify system is working. |
| World magnetic model | Any free time though update only every 10 min | 15 |  |
| OS idle | Any leftover time | 16 |  |

DMU420 (from https://svn.memsic.com/svn/DMU440/UCB/trunk)

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| --- | --- | --- | --- |
| Task | Runs at | Priority | Notes |
| algorithm\_task | 100Hz | 4 | Starts by collecting sensor data |
| processUserCommands | 20Hz (as needed) | 5 |  |
| gpsProcessing | 10Hz | 6 |  |
| symP | 1Hz | 6 | maintains symmetry of P |
| OS\_idle\_task | whenever | 7 |  |