**DAILY ASSESSMENT FORMAT**

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| **Date:** | **02/07/2020** | **Name:** | **Lavanya B** |
| **Course:** | **IIRS** | **USN:** | **4al17ec043** |
| **Topic:** | **Introduction to global positioning system** | **Semester & Section:** | **6th A** |
| **Github Repository:** | **Lavanya-B** |  |  |

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| **FORENOON SESSION DETAILS** |
| **Image of session** |
| **Report**  **Introduction to global positioning system**  **Global positioning system can provide 24-hour, global, all-weather location services with high-precision and low-cost measurement. Since its birth, its high precision and globalization have attracted people’s attention. However, influenced by working conditions and other factors, GPS also has many shortcomings:**   1. **Poor autonomy. GPS is not an autonomous navigation system and relies on the satellite’s radio signal.** 2. **Poor reliability of dynamic environment: GPS positioning requires at least four satellites’ signals. During dynamic environment especially when flying with high mobility, it is possible that multiple satellites lose their lock at the same time. In addition, precision positioning using observation quantity of GPS carrier phase requires that no cycle slips occur. However, cycle slips often generate in dynamic environments due to the reduced signal-to-noise ratio and other reasons;** 3. **Susceptible to interference. Navstar’s radio signal is vulnerable to be affected by the ionosphere, terrain shade, and other factors;** 4. **Update frequency of receiver’s data is low, therefore it is difficult to meet the requirements of real-time measurement.**   **Basic Principle of GPS**  **Twenty-one working satellites and three spare satellites form the GPS space system. The satellites are uniformly distributed in six uniformly spaced approximate circular orbit planes; the orbit altitude is 20,183 km, the operation cycle is 11 hours and 58 minutes. Therefore, on the Earth or any location at near-Earth space at any time, at least four satellites can be observed, which provide continuous three-dimensional position, three-dimensional velocity, and precision time information for all types of users, implementing global, all-weather continuous navigation and positioning. Users receive GPS satellites broadcast signals and obtain positioning observation through GPS receivers.**  **Here we describe the working principle of the pseudo range measuring method in absolute positioning field. Starting the GPS receiver at any time, users can contact at least four GPS satellites at the same time. We can calculate the accurate orientation of the current GPS receiver and the relationship between the receiver and the reference coordinate system through the accurate measurement of the actual distance between the receiver and the four satellites.** |