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February 7, 2022

MECH 6970: Fundamentals of GPS
Lab 1

GPS Data Collection

Desired Coordinates vs. Receiver Coordinates

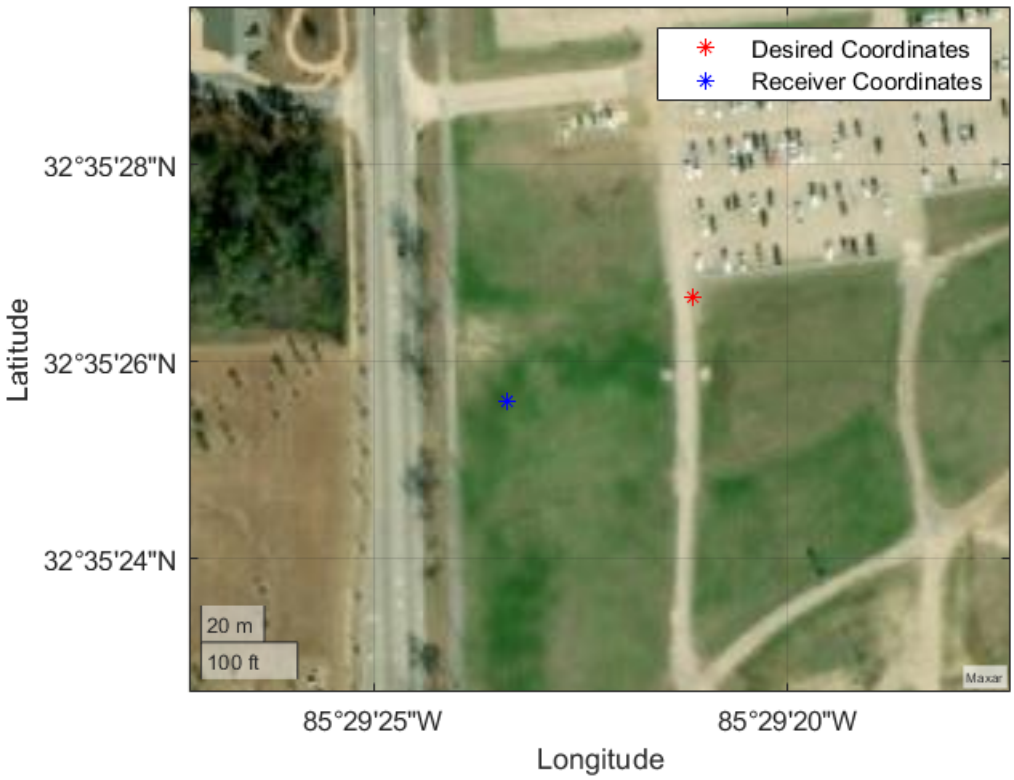

Figure 1: Receiver Accuracy

Commentary: The measurement displayed was recorded on January 26, 2022 at 12:55 PM CST. The receiver measurement was inaccurate in both latitude and longitude, however, the longitude error was greater. These inaccuracies can likely be attributed to receiver clock bias and atmospheric factors as the data was taken in a location with open sky and no nearby obstructions.

Terrain

The data was taken in an open field with no tall buildings or trees in the immediate vicinity. The location was the C Parking Lot in the field on the east side of S. Donahue Dr. The location can be seen in the following figure with Tanner holding the device used for data collection.

Figure 2: Data Collection Environment

Satellites

The satellite locations from the receiver app are compared to those predicted by the online resource, www.gnnsplanning.com. The two sources agree on which satellites are visible (by number designation), but there are slight differences in the predicted polar plot locations.

Figure 3: Receiver Predicted Satellite Locations

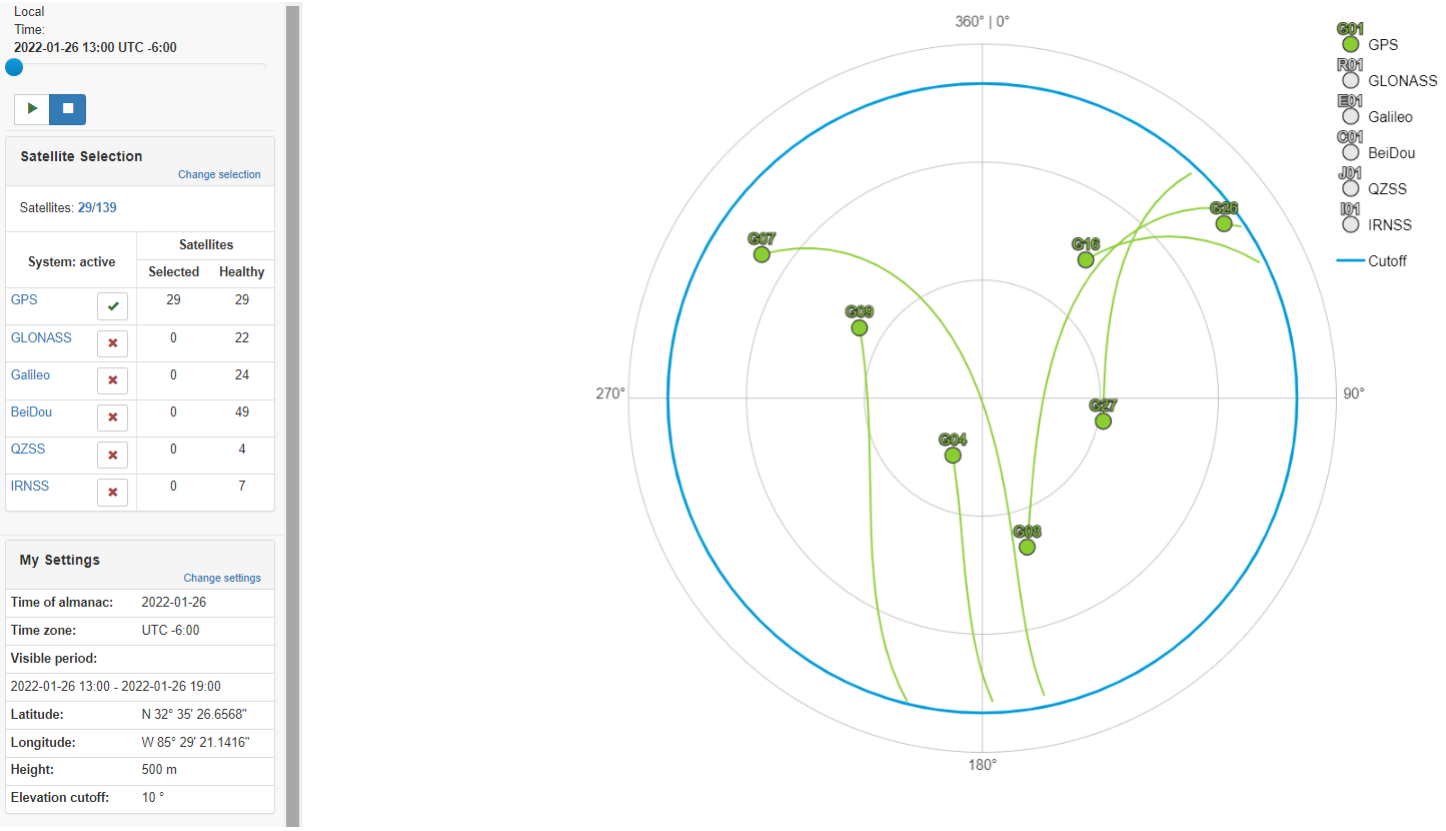

Figure 4: Predicted Satellite Locations