

Data Collection

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Equipped with a GPS device, the COGS building, sheds, parking lot, gardens, signs and street lights were digitized. The project was an introduction in GNSS field data collection methods, data management, differential correction using base station data, projection of geographic data and functional map layout creation.

Preparation

Before heading out for data collection, a data dictionary was created. This ensured data quality and simplified data input while collecting features through constraints.

Data Collection

To begin with, satellite availability and geometric dilution of precision were analyzed using Trimble GNSS Planning Online tool to find an appropriate collection time. After that, GNSS data was collected by me using a Trimble Juno handheld unit.

Differential Correction

The locations of Nova Scotia Control Monuments were first collected in order to assess the accuracy. All errors were within mapping precision. Differential correcting the collected data using Canadian Active Control System (CACS) data from the Lawrencetown base station (LTWN ACS-NS) and TerraSync Trimble Pathfinder Office 5.90 did not improve the accuracy.

Rather than using post-processed data, the original collected data were exported as ESRI shapefiles using a NAD83 CSRS (UTM Zone 20) projection.

Map Creation

The final map was created using ArcMap Desktop 10.6. Some features, such as the building, were edited manually or by using the geoprocessing Cartography tools such as *Simplify Polygons*. As a result of inaccurate position of some point features, those were displaced by approx. 1 metre. Also, a land parcel shapefile from the Nova Scotia Property Records Database in Amherst, N.S., and an aerial photograph of the property was used to digitize the COGS building.

Software

ArcMap 10.6
TerraSync Trimble Pathfinder Office 5.9

Hardware

Trimble Juno Handheld Unit

Techniques

Differential Correction using the Canadian Active Control System (CACS)

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