**GNSS DATA PROCESSING SOFTWARE (v1.0)**

GNSS Point positioning involves measurement of the signals emitted by a satellite for the determination of the position of a receiver on the surface of the Earth. The emitted signal contains information about the ephemerides and clock offset of the satellite. The signal propagation through the atmosphere is delayed by the presence of electrons in the ionosphere and the water vapour content of the troposphere. These delays affect the precision in the estimated position of a receiver. However, for a double frequency receiver, the combination of both L1 and L2 frequencies of the signals resolves the effects of the ionosphere.

The GNSS Data Processing Software (GDPS) has been developed along with other libraries for determining the ephemerides of a satellite by reading the navigation message file of a GPS satellite. Additional models have also been developed for estimating the ionospheric effect at a station, with respect to the elevation and azimuth of a Satellite Vehicle. The implemented algorithms are as defined in the IS-GPS-200L (Sections 20.3.3.4.3 and 20.3.3.5.2.5 respectively).

A Graphical User Interface has been developed to enable a user access the models. Detailed description of how to use the software are described in the next pages.

The main language used for the exercise is Python.

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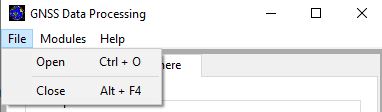
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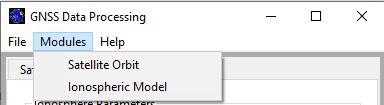
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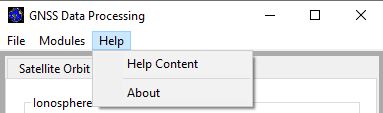
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**Data Processing**

