

5.2.3

Accessing the National Spatial Reference System

Presenter

Ross Mackay
Kentucky Geodetic Advisor
NOAA/National Geodetic Survey
ross.mackay@noaa.gov

Co-Presenter

NOAA's National Geodetic Survey (NGS) defines, maintains, and provides access to the National Spatial Reference System (NSRS) - a consistent coordinate system that defines latitude, longitude, and height throughout the United States and is designed to meet our nation's economic, social, and environmental needs. The reference stations form a network used to accurately position other points of interest. Surveyors and mapping professionals use the NSRS to ensure their positional coordinates are compatible with those determined by others. In this way, when individuals create maps; mark property boundaries; and plan, design, and build roads, bridges, and other structures, everything matches up.

The backbone of the NSRS is a network of Continuously Operating Reference Stations (CORS) which provide Global Positioning System (GPS) data to support three-dimensional positioning. NGS provides simplified access to high-accuracy NSRS coordinates via a Web service called the Online Positioning User Service (OPUS). A user may submit to OPUS a GPS data file collected with a survey-grade receiver and obtain a NSRS position via email. OPUS requires minimal user input and uses software which computes coordinates for NGS CORS network. The resulting positions are accurate and consistent with other NSRS users.