

Continuously Operating Reference Stations (CORS) Network

February 10, 2021

In News: By 2022, SVAMITVA Scheme would ensure CORS network coverage across the Country

About Continuously Operating Reference Stations (CORS) Network

- A Continuously Operating Reference Station (CORS) network is a network of RTK base stations that broadcast corrections, usually over an Internet connection.
- The CORS network is a multi-purpose, multi-agency cooperative endeavor, combining the efforts of hundreds of government, academic, and private organizations.
- The stations are independently owned and operated.
- Each agency shares their GNSS/GPS carrier phase and code range measurements and station metadata with NGS, which are analyzed and distributed free of charge.

Application

- Survey of India wanted a very accurate, uniform Geo-positioning infrastructure throughout the country.
- The idea behind is to provide a common positioning platform in defined accuracy for the survey, mapping and monitoring of large infrastructure projects – as irrigation, railroad, canals, dams, smart cities, drainage planning along with management of revenue maps and state boundary management.

Solution provided

- As a solution for the uniform geo-positioning system throughout the country, a well-defined and adjusted

network of continuous and permanent reference stations with network real-time GNSS rover for field survey was outlined.

- The solution provided would define positional accuracy with data correction from CORS (Continuously Operating Reference Stations) network on the concept of VRS (Virtual Reference Station), correction and all the CORS data streamed to a master control center for better control and monitoring of data, with one redundant control station for uninterrupted service in case of maintenance or updating of data center and communication.
- Also, the solution uses Indian Navigational Satellite system (NAVIC), with the improvement of NAVIC our dependencies over the foreign satellite system would decrease and reliability and security of data will be better.

The NOAA CORS Network (NCN)

- The NOAA Continuously Operating Reference Stations (CORS) Network (NCN), managed by NOAA/National Geodetic Survey, provide Global Navigation Satellite System (GNSS) data, supporting three dimensional positioning, meteorology, space weather, and geophysical applications throughout the United States.
- Surveyors, GIS users, engineers, scientists, and other people who collect GPS/GNSS data can use NCN data, acquired at fiducial geodetic control stations, to improve the precision of their positions, and align their work within the National Spatial Reference System (NSRS).
- NCN enhanced post-processed coordinate accuracies can approach a few centimeters, both horizontally and vertically.