

Recent Developments in the Sector of Navigation Satellite System Reference Stations (GNSS) and Possible Links with the Typical Surveying Measurements Carried Out by the Surveyors

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Key words:

SUMMARY

In the last decade, the potential benefits of the navigation satellite system (GNSS) have been analyzed very much; infact, a series of improvements have been realized within various applications, as the land, marine and aerial navigation.

The solutions more used and reliable are the differential GPS (DGPS) and the satellite systems of improvement (SBAS).

The goal of the above mentioned applications is the improvement, as much as possible, of the accuracy of the positioning through the only GPS, bearing in mind the characteristics and the requisites of the navigation services.

Both DGPS and SBAS lead to an increase of the number of the reference stations used (with different types of technique) for calculating the “differential” correction. The number of the stations and their availability depend on the politics and on the finances of various countries.

The atmosphere is the principal cause of mistakes found in the GPS, DGPS and SBAS positioning. A lot of scientific studies have tried to solve this problem in understanding the limits of these systems and suggesting probable modifications to produce in.

The atmospheric and their effects on the topographical and cadastral measures are studied in order to refine the quality of the typology of measures, today available, and to analyse in depth the current limits, having the aim of individualizing, with accuracy, the possibilities given by the GNSS systems in the near future.