

A GNSS Network is a sustainable positioning infrastructure for supporting Land Management Operations

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Key words: GNSS Network, Positioning Infrastructure, Sustainability

SUMMARY

A GNSS Network is a fundamental positioning infrastructure that is supporting GNSS surveying operations in the most efficient way.

That sustainable infrastructure is often named "Active Geodetic Network" and is composed by several permanent GNSS receivers and antenna disseminated over a region or over a country, a nation.

The net benefit of such infrastructure is to provide 24/7 along the year corrections and data to the surveyors in order to reach centimeter accuracy level in real time or in post-processing mode. Only one GNSS rover receiver is needed to operate in the field which represent a significant cost reduction in the investment of surveying equipment.

Land management operations are based on cadastral maps and spatial data sets. Actually governments, financial and funding organizations are supporting the development and deployment of such organizations as referring to Hernando De Soto writings because they are the basis of a growing and sustainable economy by protecting the most important assets: the land property rights.

The author would like to stress the attention to the fact that in many projects, funds are allocated to support cadastral organizations by modernizing their spatial data sets (including maps) and are most of the time allowed to acquire first software, topographical equipments such as total station and GNSS receivers, but often miss to also consider in their plan to validate the existing geodetic network that most of the time needs to be re-observe or even in many cases rebuilt. Without that consideration, all the modern surveying technology will at the end fail to provide the expected results.

That paper will bring arguments to managers of land management and cadastral organizations to consider a GNSS Network as their most fundamental building block: a positioning infrastructure.

The recent African initiative AFREF has been launched to address that question while in the same time many land management and cadastral organizations started their data acquisition in an uncoordinated way.

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1. INTRODUCTION

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