



XXVII FIG CONGRESS

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Volunteering
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DIGITAL SURVEYING

SOLUTION TO BOUNDARY SURVEYING AND LAND REGISTRATION ISSUES IN GHANA

Presented By:

Surv. Stephen Djaba

FIG Honorary Member

Vice President - Licensed Surveyors

Association of Ghana (LiSAG)

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INTRODUCTION

Since memory fades and people die vital information such as the boundaries of the land was lost because there wasn't a way to determine the exact line that shows where the land begins and ends.

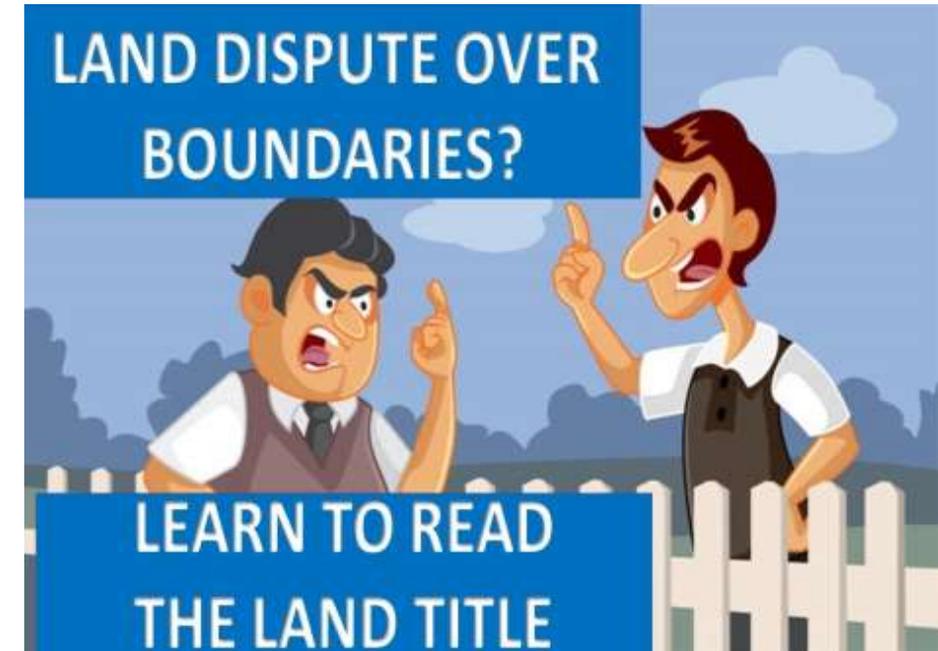
They used relief features such as trees, water bodies, and other natural land features as indicators showing the boundaries of a piece of land.

INTRODUCTION

This paper looks at a future where the boundary surveying and land Registration system of Ghana will have no problem showing the exact boundaries of a piece of land and help reduce, if not completely eradicate land disputes in Ghana with the introduction and use of Digital Mapping (Using the Geogenie Technology and Continuously Operating Reference Station (CORS) Network) to create a digital cloud-based database which gives real-time ground coordinates where a surveyor can upload coordinates unto to tablets and with the use of Geogenie on the field,

INTRODUCTION

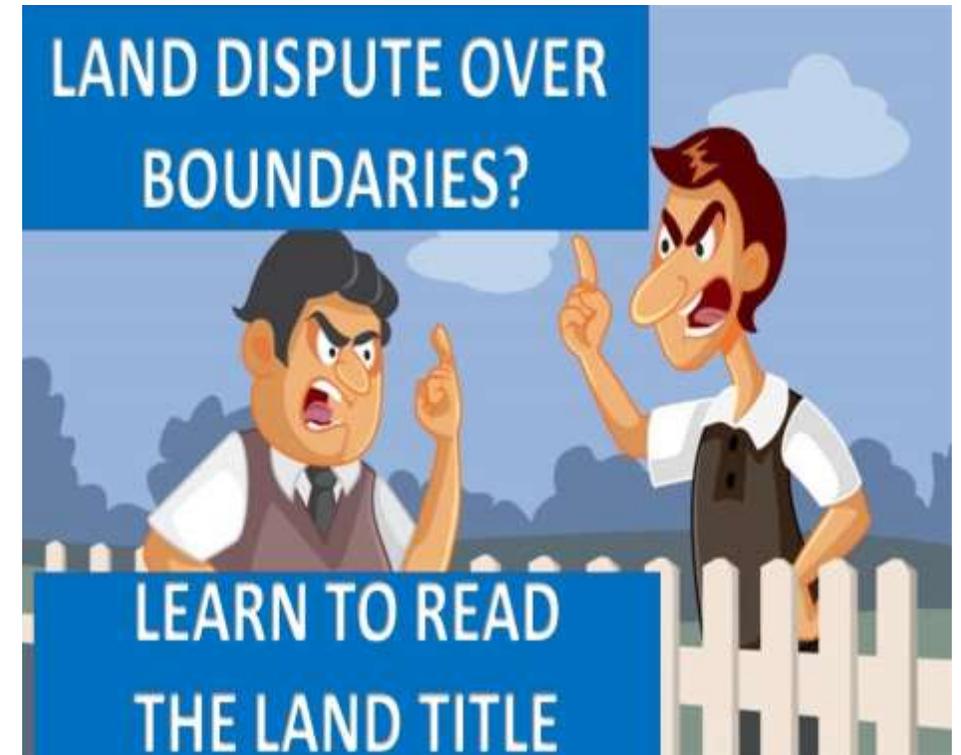
Early arguments on land disputes and conflict are mainly attributed to improper documentation of the original land arrangements. Plan of lands was not annexed, boundaries were not properly surveyed, unclear demarcation, and lack of accurate documentation in most cases.



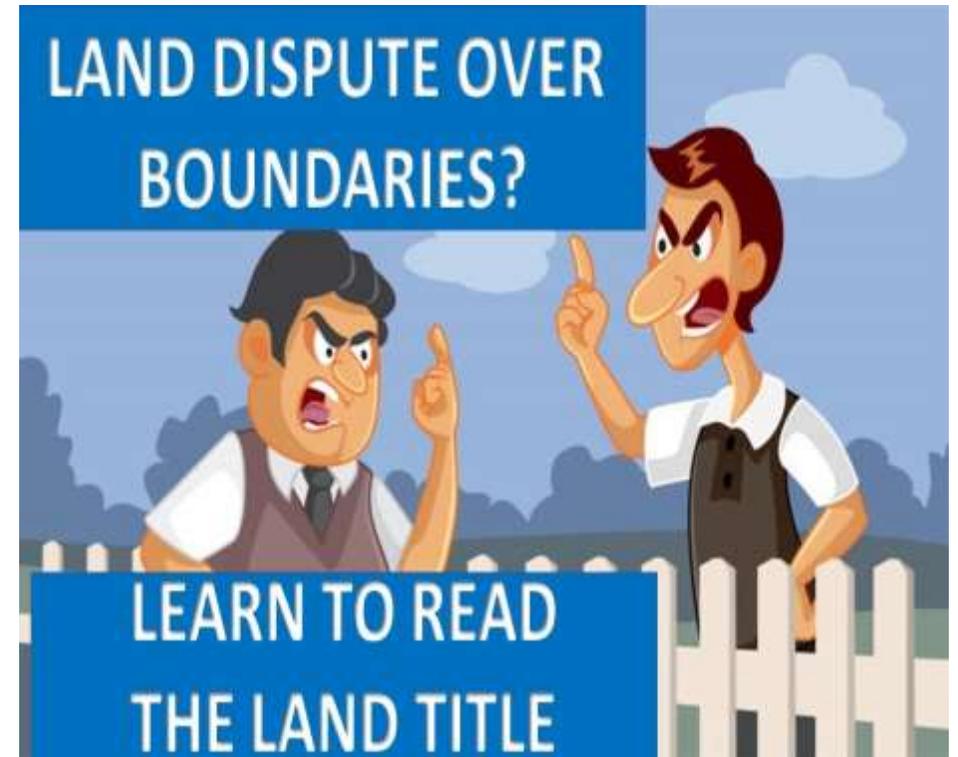
RESEARCH PROBLEMS.

One major challenge faced by the land Registration system in Ghana is the inability to accurately determine the exact boundaries or demarcations that encloses a parcel of land. This has resulted in a lot of land dispute cases in Ghana

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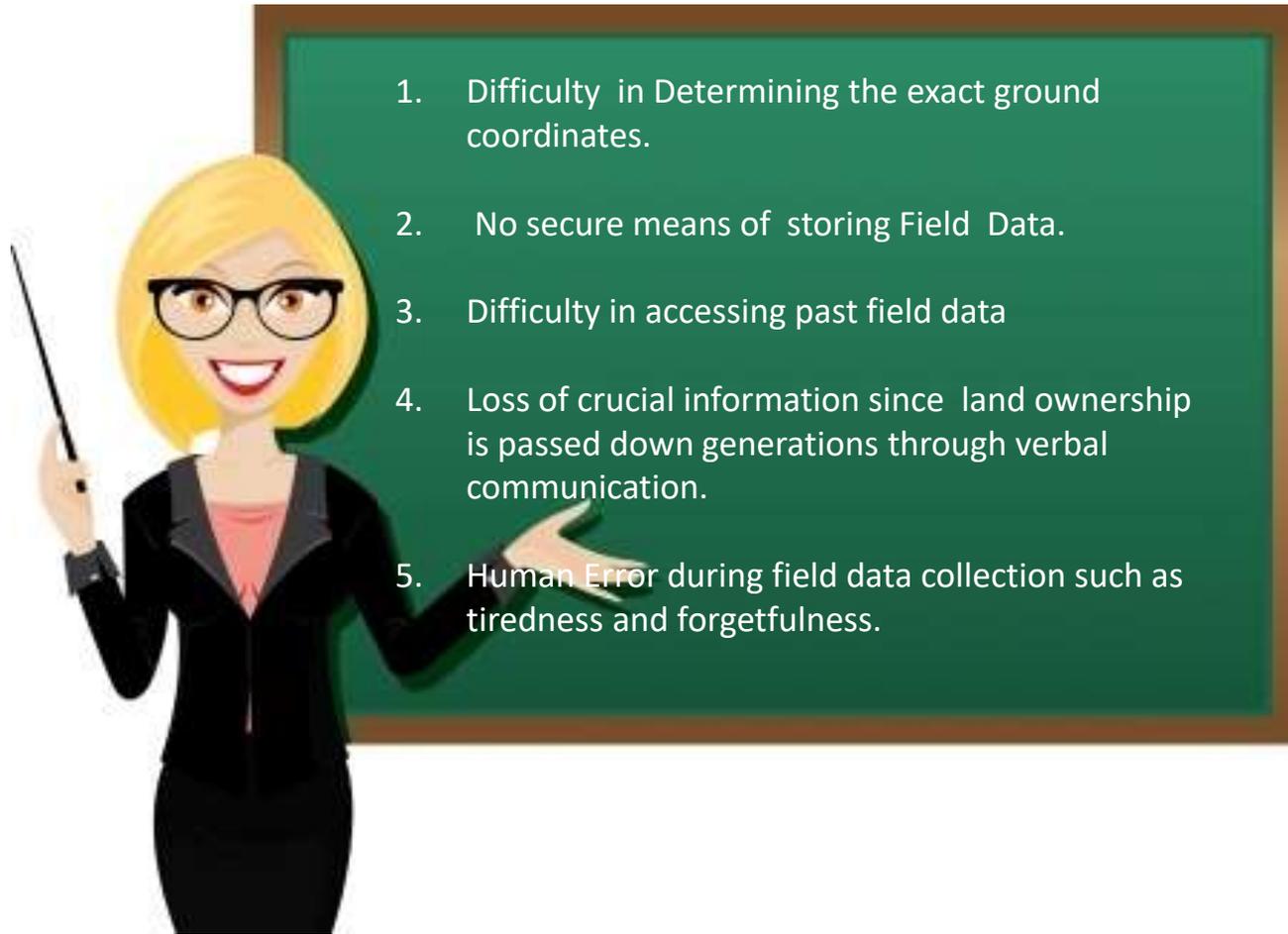
Land disputes over boundary demarcations in Ghana is rising at an alarming rate.





In Ghana, Land cases constitute about **59%** of total cases in court. Meanwhile, the average increase of land cases per year is about **25%** whereas the rate of settlement is as low as **10%**





1. Difficulty in Determining the exact ground coordinates.

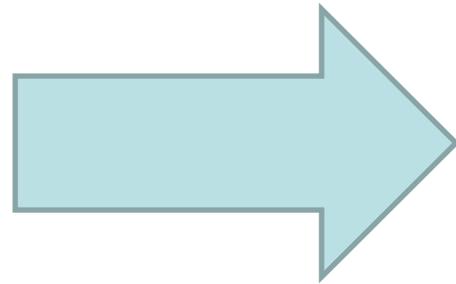
2. No secure means of storing Field Data.

3. Difficulty in accessing past field data

4. Loss of crucial information since land ownership is passed down generations through verbal communication.

5. Human Error during field data collection such as tiredness and forgetfulness.

what are the some of
causes many of
disputes issues? land



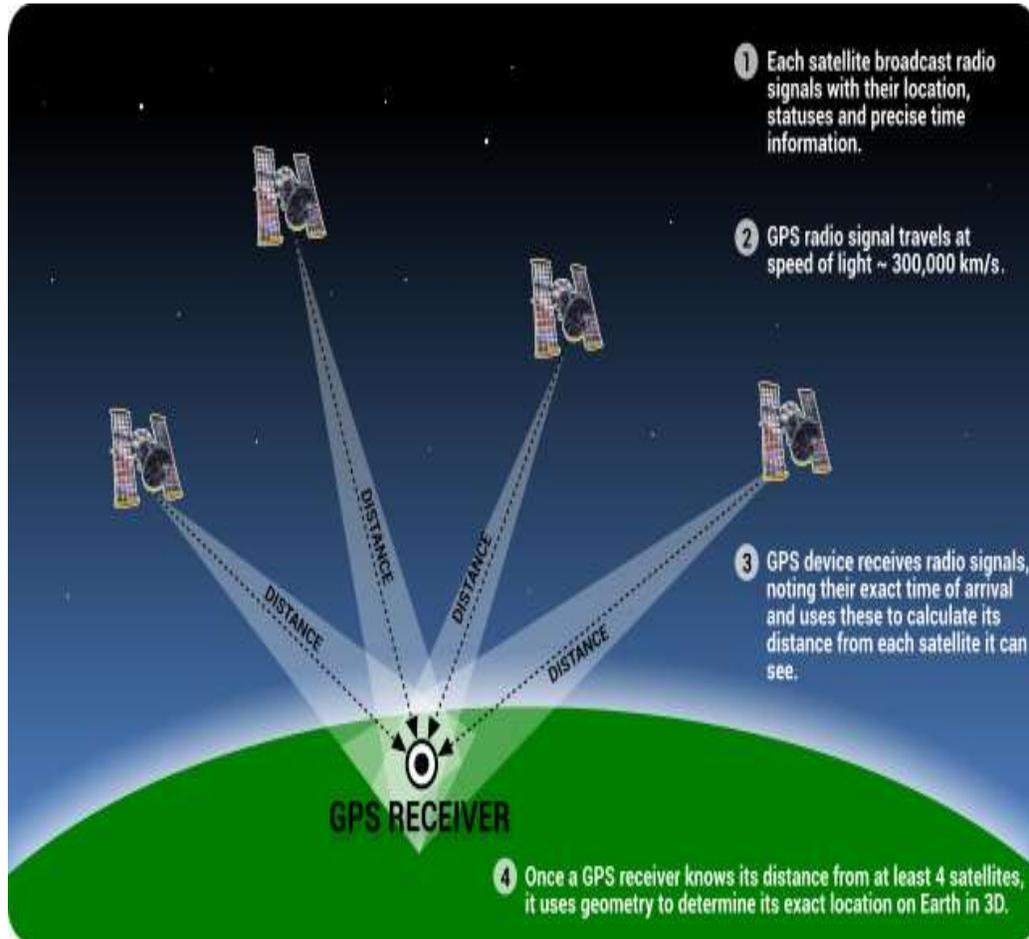
Can boundary demarcation disputes in Ghana be reduced?





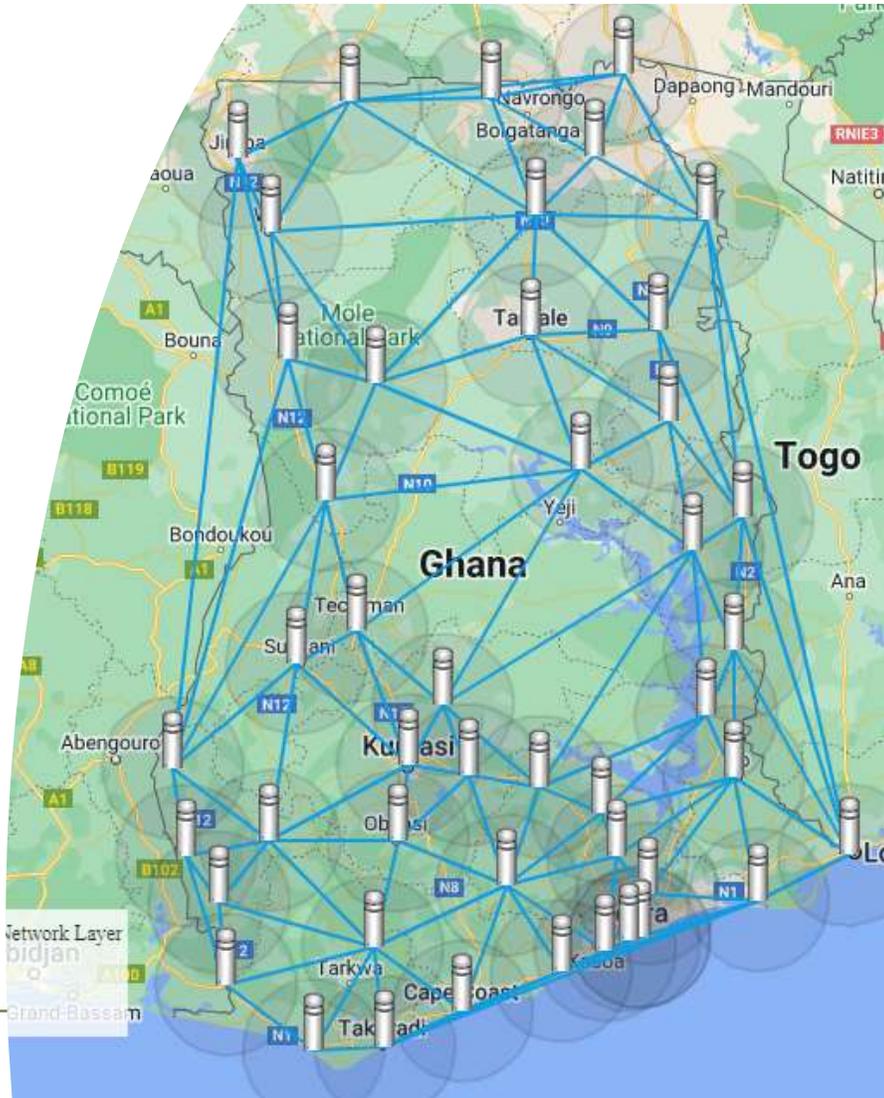
With the introduction of the digital way of surveying such as GNSS CORS networks in combination with GeoGenie software where data are captured directly and stored in the cloud and update in real time, the rate of land disputes will be drastically reduced.





□ Digital surveying is basically the use of innovative approach of us satellites and receivers in realtime to determine the accurate location and distances on the earth surface and data processed remotely. Cloud based surveying and Mapping

□ The infrastructure has strengthened geospatial activities in the country and further eliminated issues such as loss of data, indeterminate boundaries and readily available controls to serve the nation.



Geo-Tech Systems Ltd and GMX Systems have collaborated to build a nationwide CORS network . Currently, 49 Active stations have been build and planned complete total of 89 station by the end of the year 2022.



Cloud-based surveying and mapping

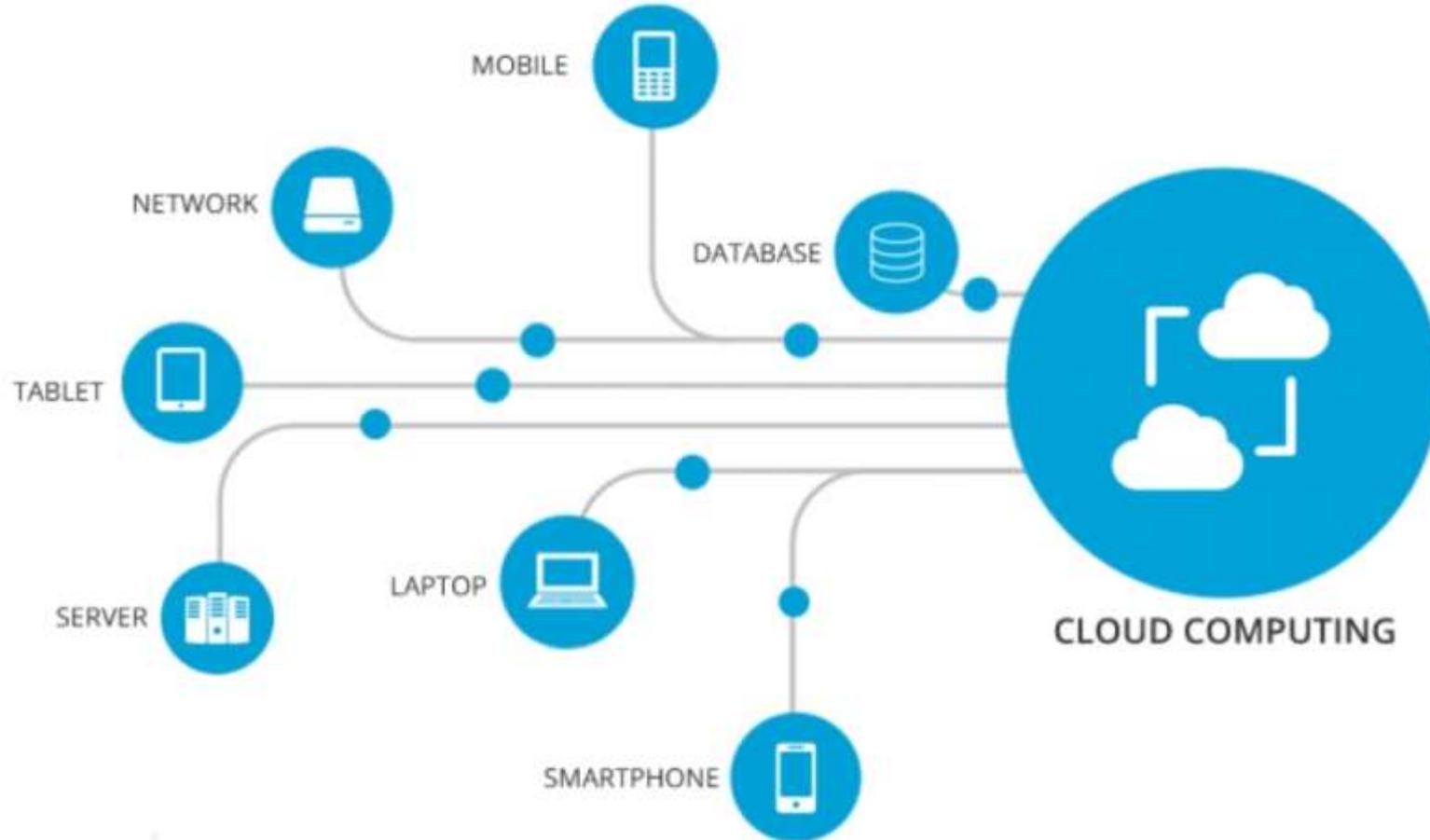




Field & office collaboration



On-site collaboration



ADVANTAGES OF THE USE OF THE GEOGENIE SOFTWARE & RECEIVERS.

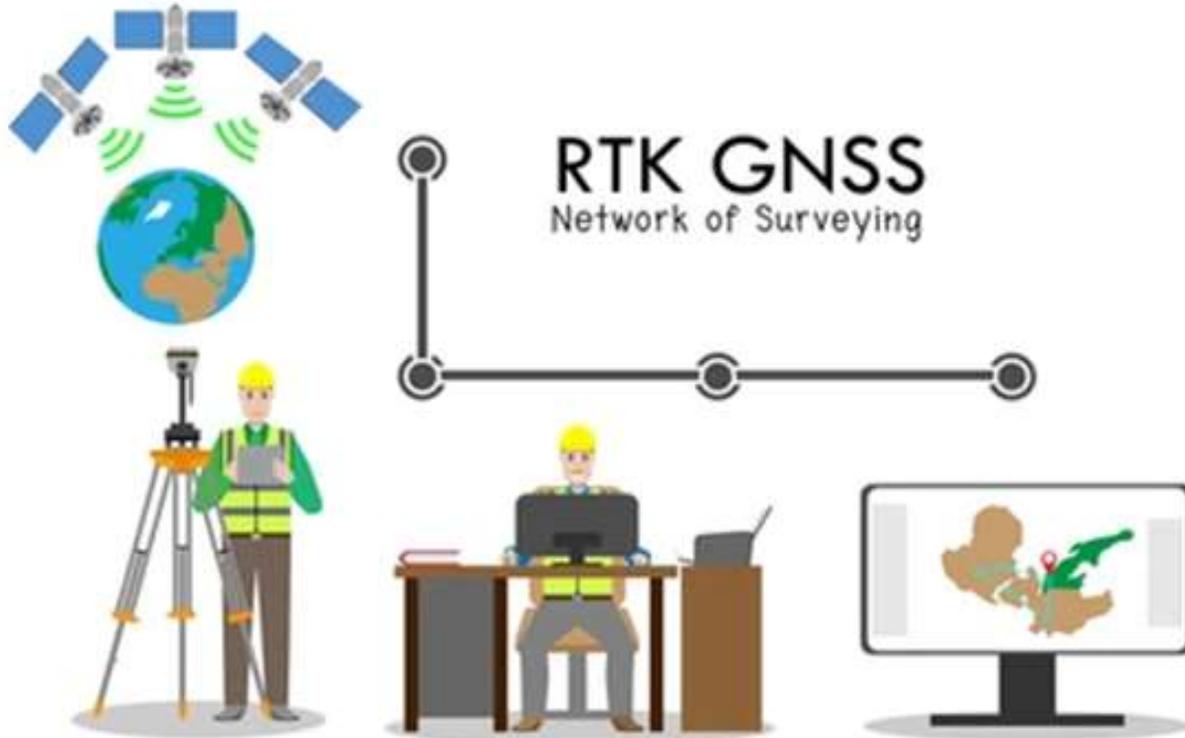


- ❑ Geogenie has a cloud-base storage which can be accessed anytime and anywhere
- ❑ Field data of about 100 years ago can be accessed without loss.
- ❑ Geogenie can be access by any GNSS device and brand

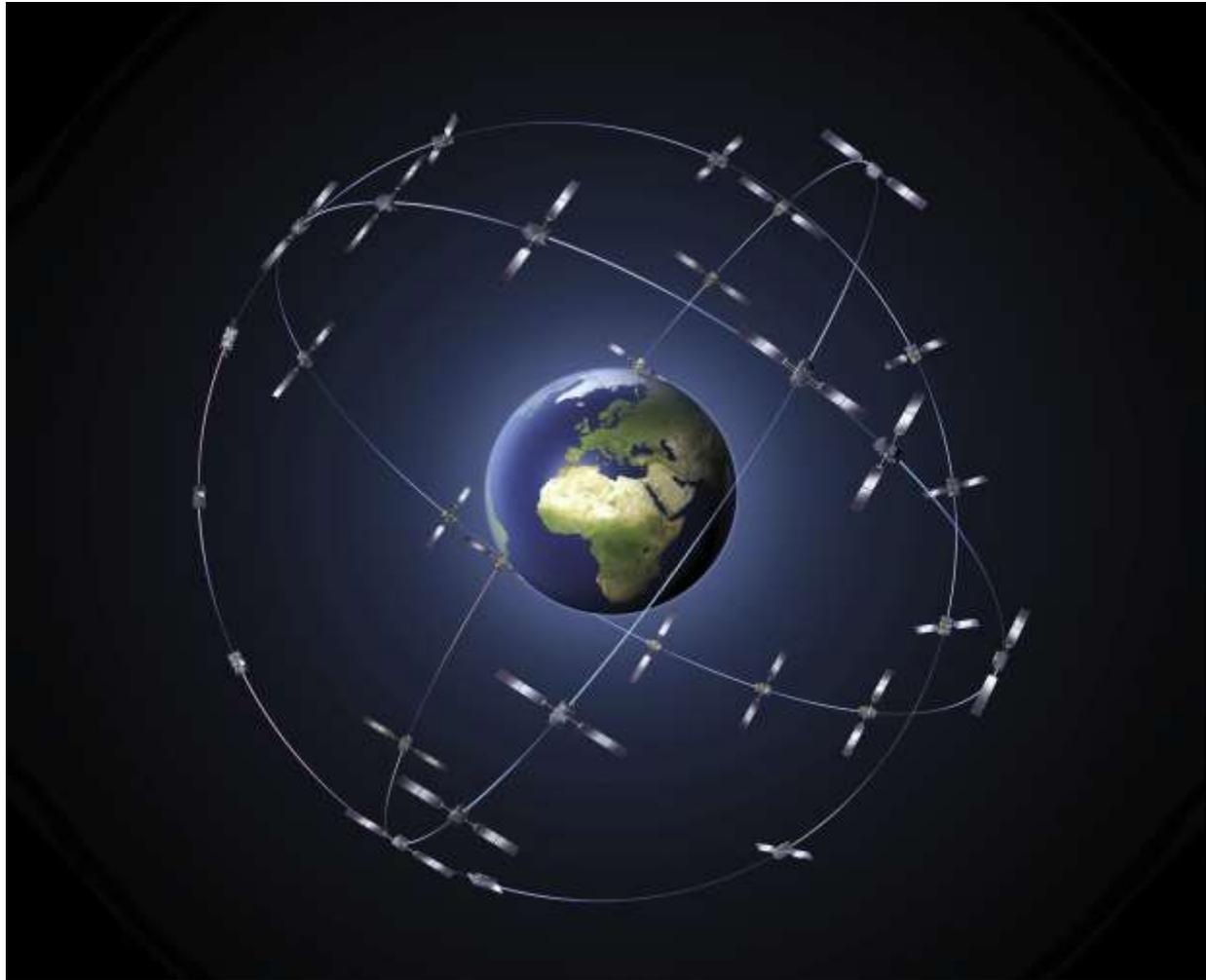


A COST-EFFECTIVE TOOL





- Geogenie platform enables the user to remotely access data between office and field.



- Digital surveying is the future of surveying where field data collection, processing and storage is done efficiently with less time and energy.



