GEOSIGHTSX WEBINAR SERIES 1 SUMMARY

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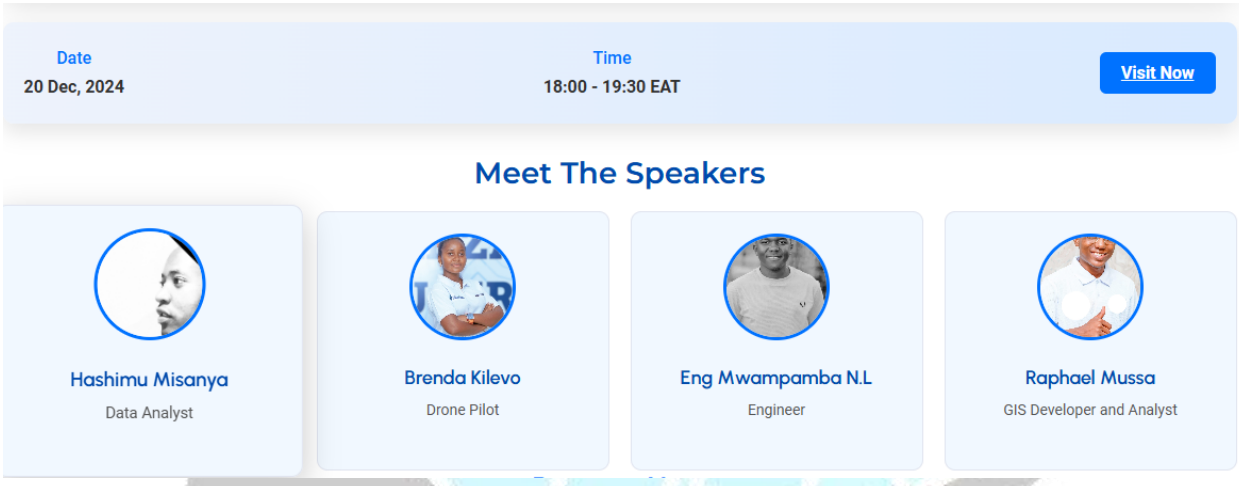
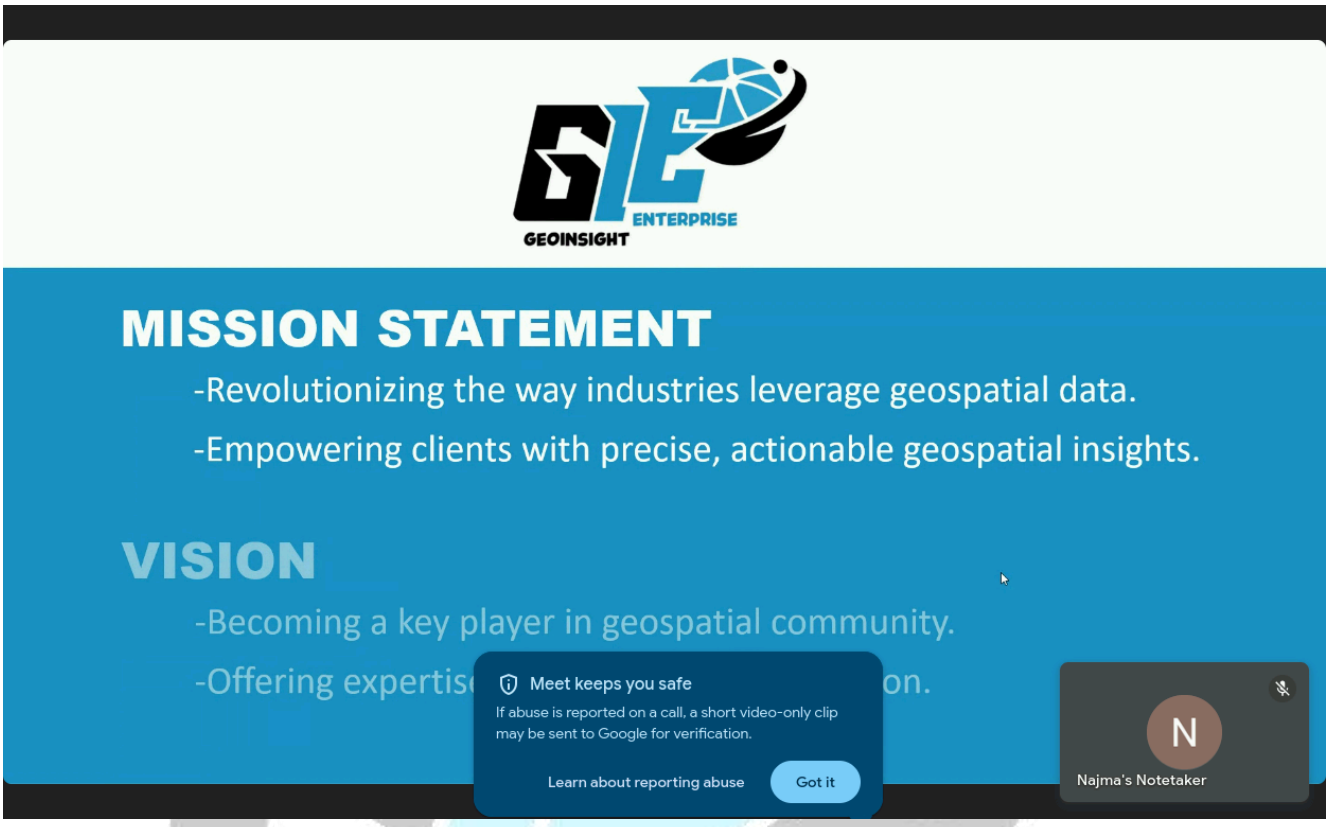
GEOSIGHTX WEBINAR, FOR LAKES CHANGE DETECTION CASE STUDY



SUMMARY

Brenda Mussa Kilevo introduced GeoInsight Enterprise Limited, highlighting their mission to revolutionize geospatial data use and their services in GIS consulting, real estate, agriculture, urban planning, and remote sensing. She discussed the benefits of drone technology in water quality monitoring, including cost efficiency, precision, and environmental impact. Engineer Mwampamba elaborated on remote sensing, emphasizing its use in acquiring Earth data without physical contact. He explained the applications of remote sensing in water management, such as monitoring lake levels and vegetation. Finally, Rafael Musa demonstrated GeoSightX, a tool for analyzing water extent changes, showcasing its dynamic similarity analysis and downloadable results



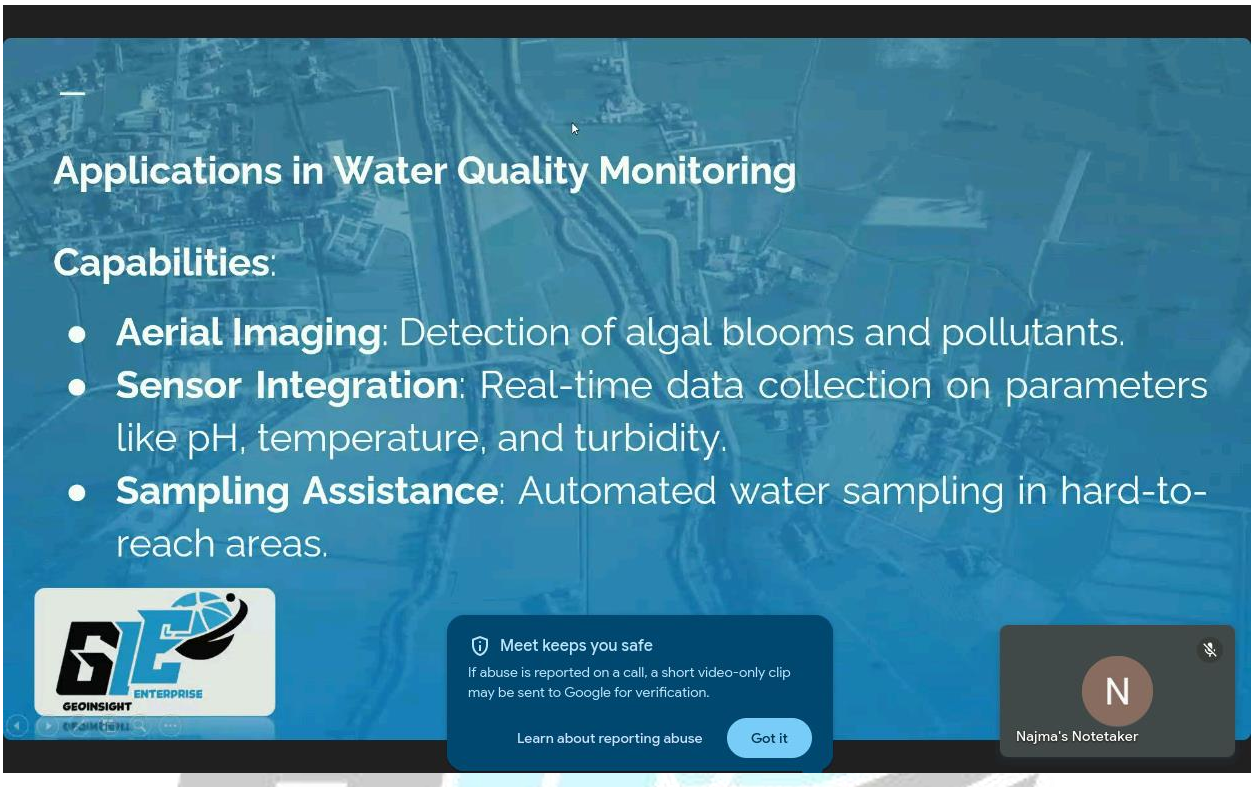
Outline

Introduction to GeoInsight Enterprise Limited

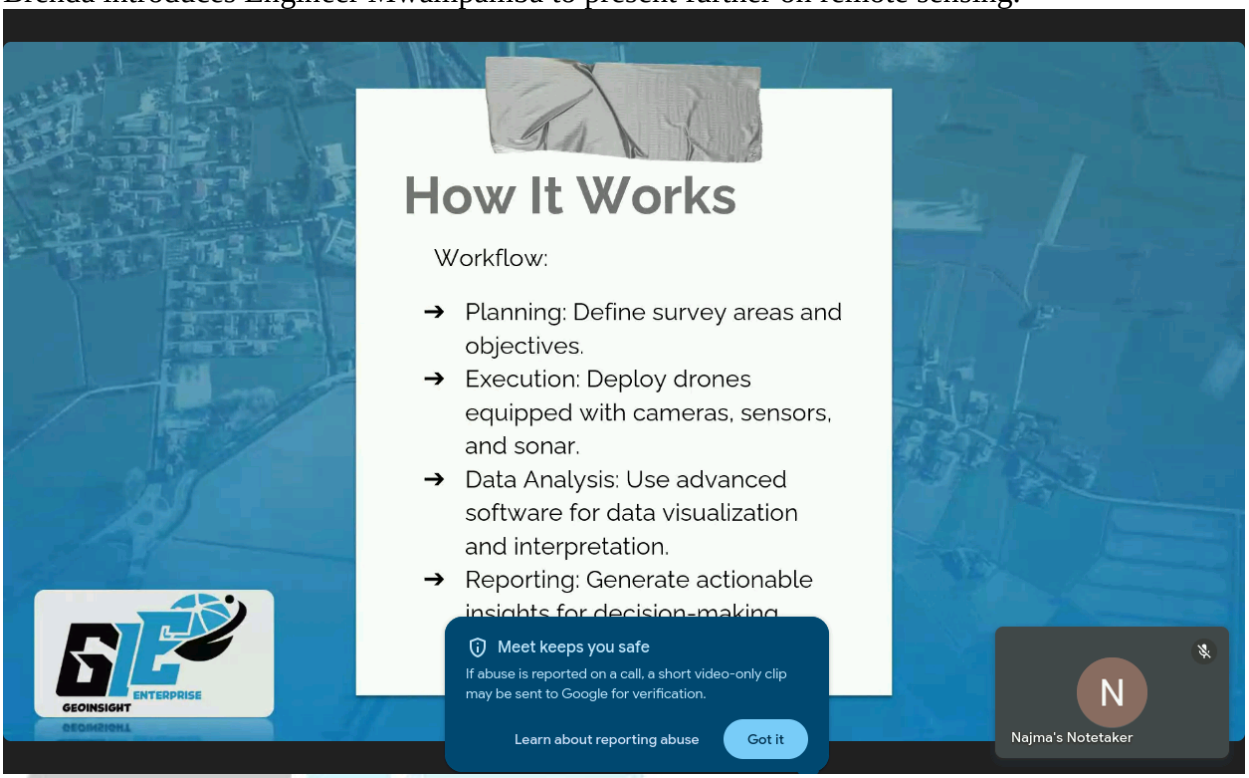
- Speaker 1 (Brenda Mussa Kilevo) introduces herself as a drone pilot and the host of the meeting.
- Brenda shares the mission, vision, and core values of GeoInsight Enterprise Limited, emphasizing innovation, integrity, sustainability, excellence, and collaboration.
- The company provides various services including GIS consulting and analysis, real estate GIS solutions, agricultural GIS solutions, urban planning and development, remote sensing and satellite imagery, and training and capacity building.
- GeoInsight serves industries such as real estate, agriculture, urban planning, environmental management, transportation, utilities, and mining.

Application of Drone Technology in Water Quality Monitoring

- Brenda discusses the challenges of accessing remote water bodies, high costs of traditional survey methods, and time-consuming data collection processes.
- Drone technology offers cost-effective, time-efficient, and high-precision alternatives for water quality monitoring.
- Applications of drones include area imaging to detect algae blooms and pollutants, sensor integration for real-time data collection on parameters like pH, temperature, and turbidity, and sampling assistance in hard-to-reach areas.
- Drones are also used in bathymetry surveys with Lidar and Sona integration for high-resolution underwater topography mapping and shallow water efficiency using echo sounders.

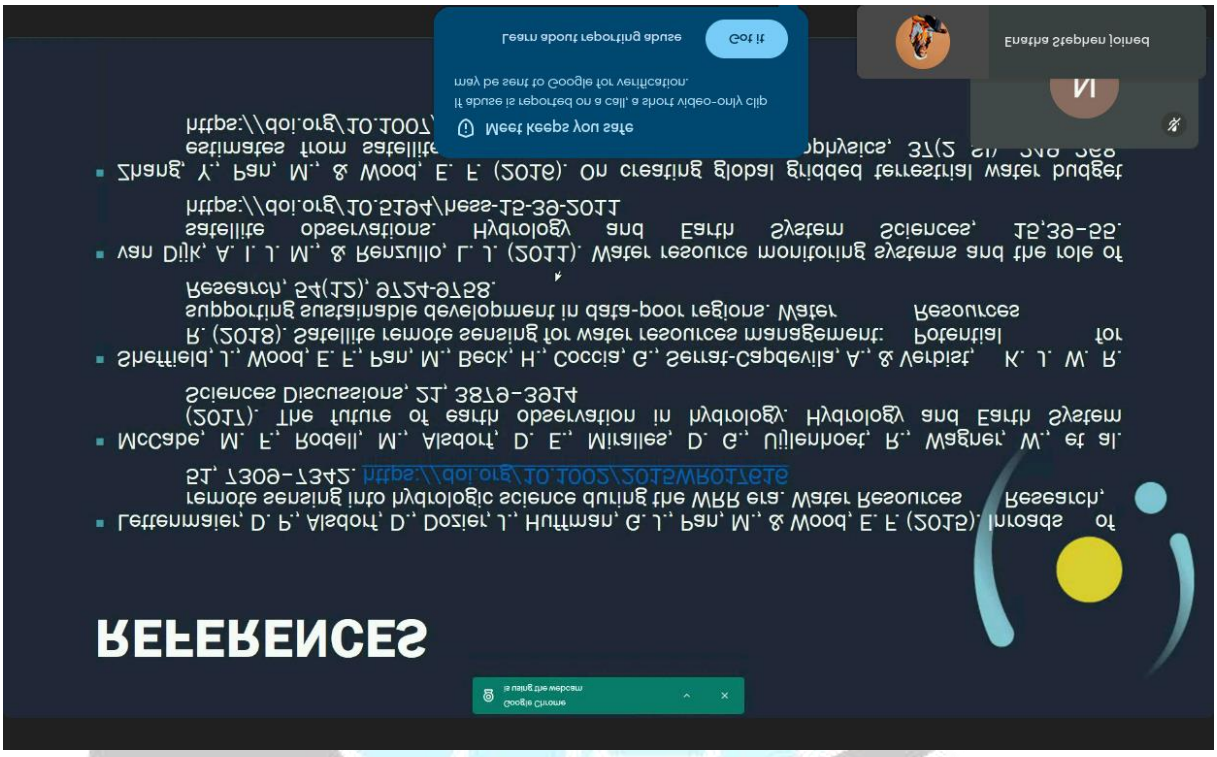


Advantages and Process of Drone Technology in Remote Sensing

- Brenda highlights the advantages of drone technology, including efficiency, cost savings, high-resolution imagery, minimal environmental impact, and flexibility.
- The process of using drones involves planning, execution, data analysis, data visualization and interpretation, and reporting.
- Brenda introduces Engineer Mwampamba to present further on remote sensing.
- 

Introduction to Remote Sensing by Engineer Mwampamba

- Engineer Mwampamba explains the concept of remote sensing as the acquisition of information about an object or phenomenon without physical contact.
- He provides examples of daily life remote sensing, such as taking a photo of an object or phenomenon.
- Remote sensing is particularly applied to acquiring information about Earth or other planets using devices like drones and satellites.
- The output of remote sensing includes images that can be classified and analyzed using software such as ArcGIS, QGIS, and Google Earth Engine.



Satellite Remote Sensing and Its Applications

- Engineer Mwampamba discusses the increasing use of satellite remote sensing as a complementary source of information to in situ monitoring networks.
- Satellite-based sensors can make direct and indirect measurements of nearly all components of the hydrological cycle.
- Remote sensing can provide critical information for managing water and monitoring hazards and their impact.
- Examples of components measured through remote sensing include precipitation, evaporation, lake and river levels, soil moisture, snow, and total water storage.

Demonstration of GeoSightX by GeoDev Rafael Musa

- Engineer Rafael Musa introduces GeoSightX, a free tool available on the GeoInsight website, designed to help users identify similar landscapes and areas of interest.
- GeoSightX features an interactive map interface, environmental layer selection, dynamic similarity analysis, and downloadable results.
- Rafael demonstrates how to use GeoSightX to monitor changes in water extent using Lake Sulungu as an example.
- The tool allows users to define the area of interest, select environmental factors, and analyze changes over time by comparing data from different years.

Q&A Session and Further Clarifications

- Oscar Mwankupili asks about the applicability of GeoSightX to other lakes and the integration of water quality parameters like pH.
- Rafael confirms that GeoSightX can be used for any lake and explains how remote sensing images can provide information on water quality parameters.
- Engineer Mwampamba provides a high-level overview of how remote sensing data can be processed to obtain information on water quality parameters.
- The session concludes with a reminder for participants to type their questions in the chat for further clarifications.

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