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DIGITAL AERIAL SURVEY

(DRONE SURVEY AND SATELLITE IMAGES)

WHY YOU NEED DRONE SURVEY Or SATELLITE IMAGES ?

Ministry on Mines vide Gazette Notification G.S.R 780(E) dated 03.11.2021 has incorporated Rule 34A in Mineral Conservation and Development Rules 2017 (MCDR 2017) amended on 03.11.2021 for submission of Digital Aerial Images of mining lease areas to Indian Bureau of Mines (IBM).

The provisions of Rule 34A of MCDR 2017 are as follows:

Rule 34A. Digital aerial images of mining lease area. — (1)Every lessee having—

(a) an annual excavation plan of one million tonne or more in a particular year; or

(b) leased area of fifty hectare or more,

shall carry out a drone survey of the leased area and upto hundred metres outside the lease boundary in the month of April or May every year and submit the processed output [digital elevation model (DEM) and Orthomozaic] images obtained from such survey or any other format as may be specified by Indian Bureau of Mines to the Controller General on or before 1st day of July every year.

(2) Every lessee, other than those covered under sub-rule (1), shall submit soft copy of high resolution Georeferenced Ortho-rectified Multispectral satellite images of the leased area and upto hundred metres outside the lease boundary taken in the month of April to June of every year, to the Controller General on or before 1st day of July of the that year in the standards formats such as GEOTIFF along with metadata, or any other format as may be specified by Indian Bureau of Mines in this regard:

Source: - Indian Bureau of Mines

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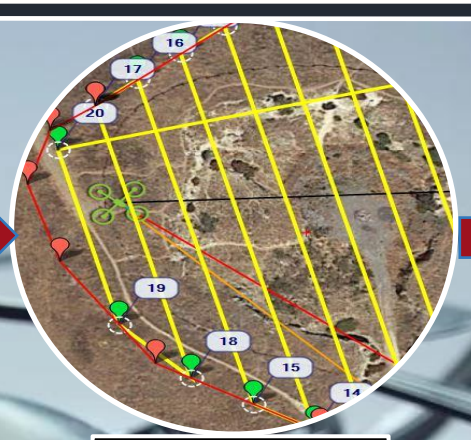
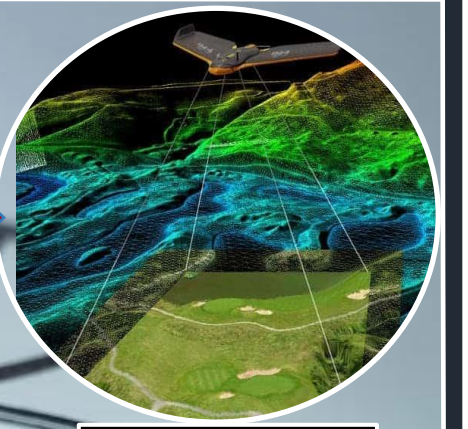
WHAT WE DO?

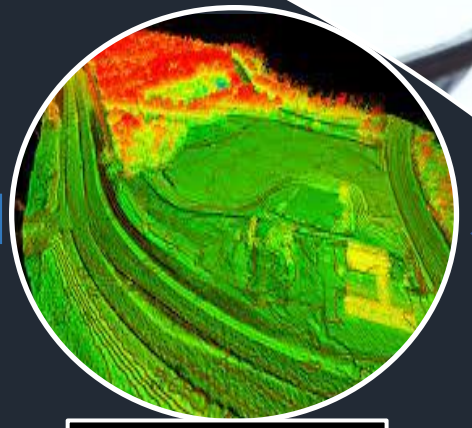
SITE SELECTION



FLIGHT PLANNING



DATA ACQUISITION



DATA PROCESSING

IBM
(Indian Bureau of Mines)

REPORT SUBMISSION

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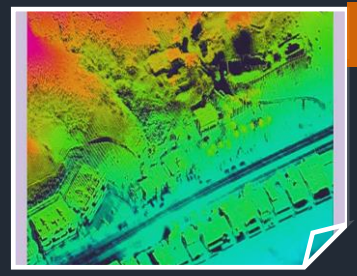
Q: WHAT YOU GET?
A: DATA TYPES

ORTHOMOSAIC MAPS

Accurate 2D geotagged representation of earth surface from top view. Orthomosaic plans allow area, volume and distance of mine site and projects to be measured correctly.

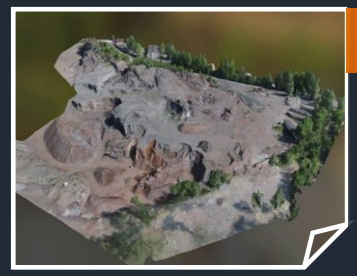
DEM (DIGITAL ELEVATION MODEL)

DIGITAL ELEVATION MODEL is digital representation of the Earth's surface in terms of height including with and without features present on the surface of the earth. {With features-DIGITAL SURFACE MODEL (DSM), without features-DIGITAL TERRAIN MODEL(DTM)}



POINT CLOUD

3D representation of the real-world in form of points or digital 3D copy of real world. Point Cloud gives us the freedom of measuring in 3D and hence enabling us to find out height difference between two points (sloped and horizontal), volume estimation of a specified region, elevation profile of a section



3D-MESH

3D Mesh is the most accurate representation of the real-world in every form. It also gives us the freedom of measuring in 3-dimension (3D), and hence, enabling us to find out height difference between two points, volume estimation of a specified region, elevation profile of a section etc.

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Q: WHAT YOU GET?
A: DATA TYPES

CONTINUED…

GROUND CONTROL POINTS

These are the points that define the data accusation during the flight of drone and accusation of satellite images for very high accuracy (>5 cm) which is ultimately used for generating accurate calculation, from the data acquired, for various aspects in mining sector.

MAPS

With finalization of data processing the accurate Geo tagged images, representation of the lease area is possible which cover various aspect for future planning by demarcation of areas like excavation zone, overburden dumping zone, back filled area, rehabilitated area, water storage and discharge site etc.

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ADVANTAGES

Cost-effective approach

"Quicker data collection - Drone surveys for mine sites enable more rapid data collection, nearly 30x faster than traditional land-based practices carried out by personnel"

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WHY SGC FOR DIGITAL AERIAL SURVEY ?

- *More than 100+ yrs. cumulative expertise team experience.*
- *250+ completed projects across Mining and Survey*
- *Experience across 5 countries and 20 states in India*

- *Affiliated Drone Pilot License from DGCA (Directorial General of Civil Aviation).*
- *Equipped with drones specified under IBM circular of Rule 34A of MCDR 2017.*
- *4 DGPS equipment for attaining precision data up to accuracy of less than 1cm.*
- *In coordination with affiliated organization for Cloud based data processing for fast data processing and accurate measurement.*
- *Equipped with various GIS platforms covering all the aspects of Mining and Survey industry*

We at SGC are providing a platform with integrated system of

- ***GROUND PREPARATION***
- ***FLIGHT PLANNING***
- ***DATA ACQUISITION***
- ***DATA PROCESSING***
- ***REPORT PREPARATION and***
- ***FINAL SUBMISSION OF REPORT to IBM***

All under one umbrella of SGC.