1 Project Summary

The ideology here is to offer a 3D machine vision technology in integration with UAVs for benefitting wider areas of industrial operations such as mine planning, blast optimization, stockpile management, etc. Informed decisions with the use of 3D-UAV imaging will directly impact the management of resources used in blasting practices (raw material, explosives, and human resources) in an efficient manner.
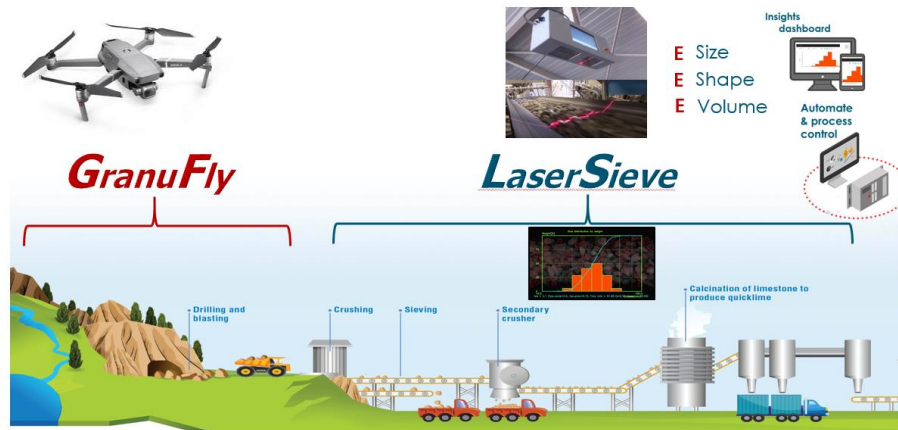

Figure 1: Metheore's existing solution for conveyor belts (Laser Sieve) and solution in development for airborne blast survey (GranuFly)

2 Technical Concept

The underlying technology propsed is 3D imaging in which three dimensional images are obtained with combination of sensors/camera/lasers. The images are then analyzed to obtain critical informations (size, shape, volume, etc.) for characterization purposes. Owing to quick & accurate measurements, this technology supersedes over all other traditional measures such as survey/sampling techniques utilized in raw materials industry (open pit mines, material handling operations) for material characterization and volume estimation. The stated technology has been developed by Metheore and is currently utilized for size & shape characterization in real time of bulk solids on conveyor belts across different dimensions of raw materials industry (crushing plant, lime kilns, sinter operations, etc.). The developed product uses 3D laser triangulation and a proprietary segmentation software (FRAGMO) to generate information in real time (Figure 1).

3 Project Status

In the accelerator program, we are engaged in extending the use of this technology to the blasting process of mining value chain by adapting our existing solution (Laser Sieve) from a fixed setup to an airborne solution (GranuFly) speicifcally to cater open pit quarries for blast survey analysis (Figure 1). Metheore has successfully graduated of the phase 1 of the program and has enetered phase 2 where GranuFLY is currently being tested in 2 pilot studies with industrial partners specifically for blast surveys as well as dyke analysis.