



## Modri planet d.o.o.

We deal with the development of real space data acquisition.

With the development of the process model of data capture and processing, we set a new milestone in certain areas. This means that some of the tasks that have so far been dealt with conventional surveying can now be replaced by technology which was developed in the company Blue Planet. In this way tasks can be easier and cheaper to carry out. Since we work with photos, which are the main source of data acquisition, our products are much more customer friendly and offer much better understanding of the environment.

### What do we need?

We made software 3D Surveying for Land Surveyors, Constructors and Building designers. We are starting to sell our software end of this year all over the world.

Our office is situated in Ljubljana, Topniška ulica 45.

We still don't have detailed market analysis.

We need to explore the market. We know who are our potential customers, but we don't know how many!

We already determine the price of software, but we don't know if it's OK!

We need some help to do this work.

### What is 3D Survey?

3D Survey is a photogrammetric software solution for image processing. Create your own orthophotos (DOF), digital surface models (DSM) or calculate volumes fast and easy. With the help of photos and ground control points (GCP) processing is fully automatic.

## Technology:

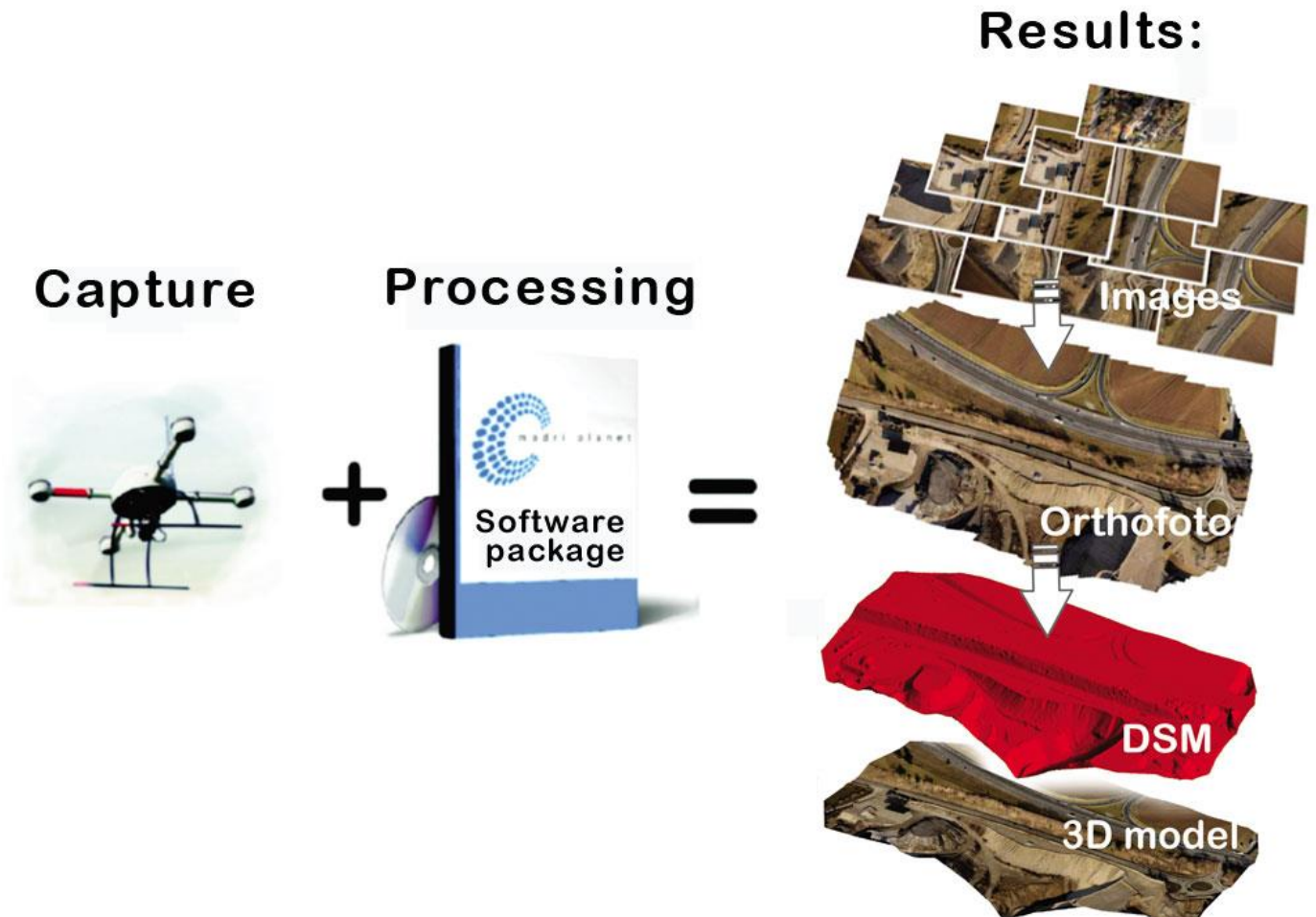
### 1. How it works?

Photogrammetry is the practice of determining the geometric properties of objects from photographic images. Photogrammetry is as old as modern photography and can be dated to the mid-nineteenth century.

In the simplest example, the distance between two points that lie on a plane parallel to the photographic image plane can be determined by measuring their distance on the image, if the scale ( $s$ ) of the image is known.

Algorithms for photogrammetry typically express the problem as that of minimizing the sum of the squares of a set of errors. This minimization is known as bundle adjustment.

The *3D co-ordinates* define the locations of object points in the 3D space. The *image co-ordinates* define the locations of the object points' images on the film or an electronic imaging device. The *exterior orientation* of a camera defines its location in space and its view direction. The *inner orientation* defines the geometric parameters of the imaging process. This is primarily the focal length of the lens, but can also include the description of lens distortions. Further *additional observations* play an important role: With *scale bars*, basically a known distance of two points in space, or known *fix points*, the connection to the basic measuring units is created.



### Development:

The described technology of data acquisition "only by capturing photos" is in rapid development and can also be useful in other areas.

The biggest opportunity we see is in medicine, where photos could be used for dermatological research. With simple technology we could identify changes in birthmarks and the possible presence of the most dangerous form of skin cancer, melanoma.

Our idea is to use 3D technology, with the use of photographs, to assess the damage caused to vehicles by hail. The car would simply drive through a photographic system and the computer module would calculate the exact scale of deformation and thus assess the damage.



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