“[The Phantom 3] was the aircraft for the job: simple to use, inconspicuous, and reliable. The drones would travel across Mexico to take thousands of images of 1,000 kilometers of highway and then those images would be processed into orthomosaic maps for delivery to the client.”

- Ian Smith, Sales and Marketing at DroneDeploy

CUSTOMER:
Skylab Industries

FOCUS:
Mapping at scale

SOLUTION:
DJI Phantom 3 Professional,
DroneDeploy Map Engine

When it came to mapping 1,000 kilometers of highway across Mexico’s complex transportation infrastructure, previous methods were unable to map such a vast area at an affordable price or within the desired time window. Instead the Mexican government turned to Skylab Industries, equipped with a small fleet of DJI Phantom 3 Professionals and DroneDeploy’s Map Engine Beta, to provide this service at an unparalled price, quality and speed.

CHALLENGE:
For the Mexican government the first step to improving their highway infrastructure was to get a clear image of the existing highway system. The Mexican government wanted to inspect pavement conditions, lane markings, vegetation encroachment and general road conditions so the most pressing road concerns could be scheduled for maintenance.

Such a task had previously been completed using manual surveying or helicopter surveying. Manual surveying would have taken much too long, while helicopter surveying would have been much too expensive. Therefore, when Sergio Lugo Serrato, Director General at Skylab Industries in Mexico, made an offer to use drones to map Mexico’s extensive network of highways, no competing offer could match them on price, turnaround time, or quality of product.

However, when Sergio Lugo Serrato won the contract, his team was tasked with mapping an enormous 1,000 km of highway. Such a drone mapping project has never been attempted, and Sergio’s team had to complete this untested aerial mapping project quickly and discretely by finding a way to make drone maps at scale over mountainous terrain within budget.
**SOLUTION:**

To map the 1,000 km of highway, Skylab formed a team of eight people equipped with five DJI Phantom 3 Professional drones. The team was tasked with taking thousands of images of the target highway, resulting in 120,000 images total.

Skylab’s fleet of Phantom 3 Professionals were extremely portable, meaning it was easy to access the locations required, however rough or remote. The range of the drones – up to 5 km or 3.1 miles, meant that large areas could be captured each flight, allowing huge swaths of land to be mapped rapidly by the fleet. Since all shots taken on the Phantom 3 are tagged with the drone’s GPS location, altitude and camera angle, a computer can easily stitch the photos together to form a single map.

Skylab then found they were bottlenecked by processing speed. They started with 8 computers before quickly realizing that at the rate these computers could process the photos they would be over a week late. Sergio was reluctant to nearly double his expenses, and instead sought out DroneDeploy’s Map Engine Beta software. This software allowed Skylab to upload their images to DroneDeploy’s servers, which let Skylab downsize from 8 computers to 1 sole computer.

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**Before DJI Technology**

Companies had 2 options when it came to mapping infrastructure

- **Helicopter Surveying**
  - Equipment costs too high for large-scale mapping
  - Risky to fly manned aircraft in unexplored, mountainous territory
- **Manned Surveying**
  - Personnel required for such a large project would take too much time to train and recruit

**With DJI Technology**

Mapping infrastructure has become easy and affordable

- **Equipment**
  - DJI Phantom series provides firms with an affordable, portable and easy-to-use all-in-one solution that they can own instead of rent
- **Software**
  - DroneDeploy software enables firms to scale their project without incurring large equipment costs

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Top: Green dots mark areas mapped in the Norther region of Mexico. Bottom: Red dots mark regions mapped in the Souther Region
RESULTS:

DJI aircraft and DroneDeploy software turned what was initially thought to be an impossible project into a showcase of Skylab's far reaching capabilities. They were not only able to meet their original deadline, but reduce overheads and equipment costs by a considerable amount.

In the end, all it took was one computer, a small fleet of DJI drones and a DroneDeploy subscription to process what would have taken 16 employees and 16 computers to do. In just 3 weeks, Skylab was able to map 1,000+ km of highway from Monterrey to Acapulco, process 114,043 images, create 869 orthomosaic maps and deliver 8TB of high-resolution highway data to the client on time.

PARTNER:

DroneDeploy

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contact us: enterprise.dji.com/contact-us

website: enterprise.dji.com

FLYING PLATFORM:

DJI Phantom 3 Professional

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