



**GE<sup>TM</sup>**  
**SMART**  
**ASIA 2015**



**TM**

**GEO INTELLIGENCE ASIA PACIFIC FORUM**

**APPLICATIONS OF UAV IN PUBLIC SAFETY:  
TM AERIAL SERVICES (TAS)**



**Ir. Rozinah Anas**  
**Project Director**  
**MERS 999**  
**Telekom Malaysia**

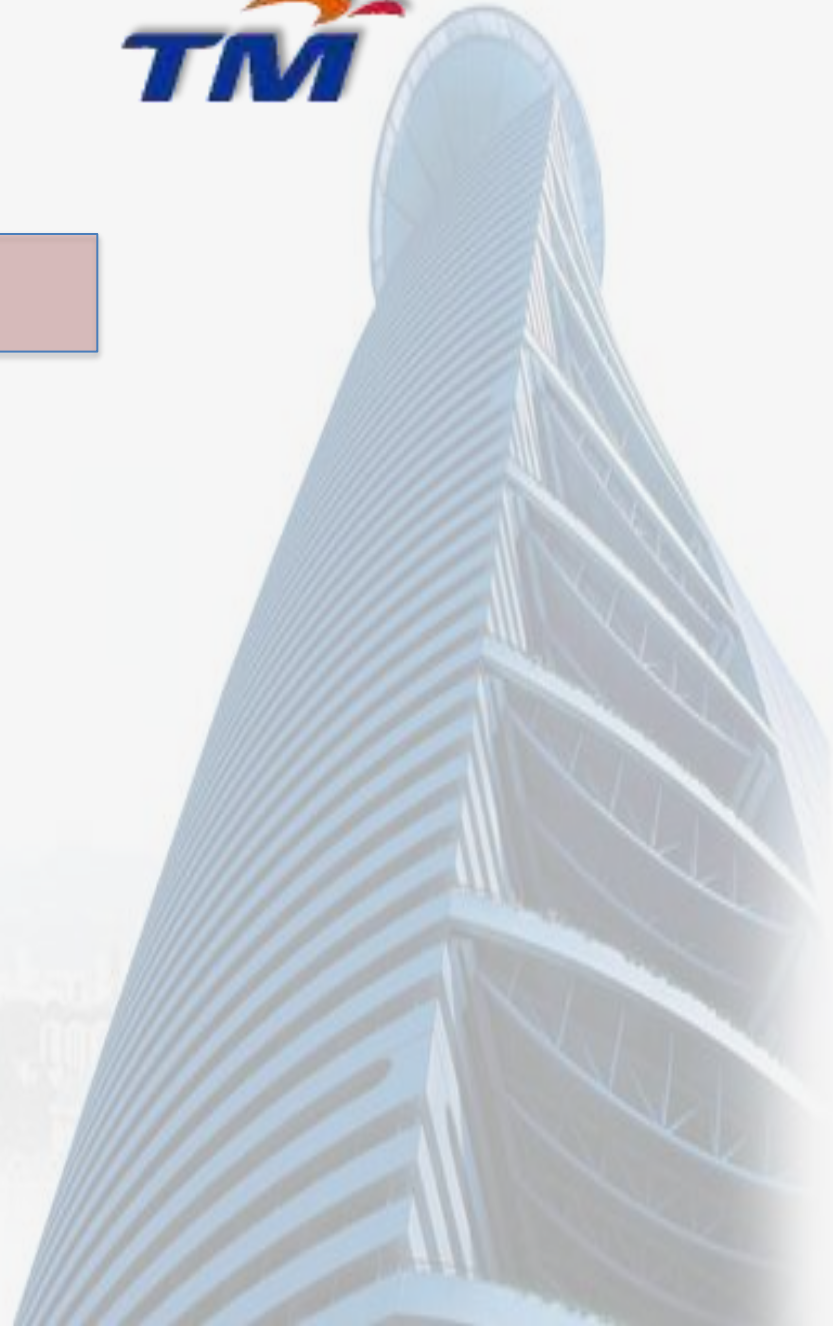
**30 September 2015**



# AGENDA



1. Introduction
2. Applications of UAV
3. TAS in Public Safety
4. Case Study
5. Conclusion



# UAV in Public Safety and Emergency Response: World Trend

## Drones to forecast future bushfires

By Charis Palmer  
Filed under Hard

WIRED.CO.UK TECHNOLOGY DRONES

### Drone could deliver defibrillators to heart attack victims

TECHNOLOGY / 25 AUGUST 13 / by DUNCAN GEERE

156 206 19 16

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#### Tags

bushfire, drone, tasmania, uav, unmanned aerial vehicle, phoenix rapidfire, big data

#### Related Articles

- Teaching drones to navigate like birds
- Aurizon uses drones to inspect rail assets
- Vic emergency services to use drones as 'eyes in the sky'

AIR NEW ZEALAND

an entrepreneur's guide to LA

available for business/premier passengers

watch the film

A German technology non-profit has put together an autonomous octocopter that can carry a defibrillator, aiming to get to patients faster than an ambulance.

Fredrich Nölle fr system in the to Westphalia. It's and allows emer call a defibrillate that automatic

said bushfire modelling expert Dr Thomas Duff.

Dr Duff is part of a team at the University of Mel Cooperative Research Centre's Phoenix RapidFi fire data, Bureau of Meteorology weather data, to on-ground fuel data in digital format to help auth intensity of fires.



## Drones: The future of disaster response

By Heather Kelly, CNN

First responders to Monday's massive tornado in Moore, Oklahoma, were greeted with a blighted expanse of destroyed homes, blocked roads, downed power lines and a limited window of time to unearth survivors before the sun set.

Navigating the area on foot or by car was a challenge because of the debris. News and law-enforcement helicopters filled the air above, but while they gathered useful information for rescue crews, the noise they created was drowning out cries for help from trapped survivors.

The entire area was declared a no-fly zone.

But one airborne technology will soon make responding to these kinds disasters easier: unmanned automated vehicles (UAVs), more commonly called drones. These portable, affordable aircraft can launch quickly in dangerous situations, locate survivors and send data about their whereabouts to responders on the ground.

There is a lot of excitement about drones in the public-safety world, and they are very close to being used in the field after natural disasters. However, they still face lengthy regulatory hurdles, privacy concerns, and a public image problem inherited from their armed, military cousins.

Flying aid Dominican Republic  
Fleet of drones could prove cheaper than

Rodrigo de Oliveira At theguardian.com, We



Field tests of the flying drones took place in the Dominican Republic and Haiti. Photograph: Matternet

A fleet of small flying drones could speed up the delivery of medicines and other supplies to remote areas, and even provide a cheaper alternative to a road network, according to Matternet, a start-up company in the US.

# TM Aerial Services - TAS

Eye on the sky services for all types of mission

Integrated solution including :

1) Live transmission in high definition

2) Data Centre for media storage

3) Geospatial Analysis



PERKEMENTERAN PANGHAWASAN, LEKAS DAN KESELAMATAN DAN NEGARA (LEKAS DAN NEGARA)

## SISTEM INTEGRATED SOLUTION BERSEPADU



- Penilaian awal
- Bantuan dilokasi
- Penyiaran maklumat
- Pengawasan & pemantauan
- Perancangan taktikal
- Pencegahan jenayah
- Pengumpulan data



## INTEGRATED SOLUTION

An integrated nationwide SUAS aerial service solution for Malaysian Emergency Response Agencies including live broadcast capability



# TM Aerial Services - TAS

TAS was officially launched by Deputy Secretary General of Ministry of Communications and Multimedia during LIMA 2015 in Langkawi



# TM Aerial Services - TAS

TAS was recommended by the Minister of Communications and Multimedia for the assessment of Sabah Earthquake

**BH ONLINE** UTAMA SEMASA POLITIK SUKAN DUNIA BISNES JENAYAH

RABU, 10 JUN 2015 @ 2:20 PM

## Guna dron nilai, peta kawasan bencana gempa - Ahmad Shabery

Twitter 14 Like Share 1.5k 8+1



*MENTERI Komunikasi dan Multimedia, Datuk Seri Ahmad Shabery Cheek (tengah) melihat dron jenis 'fixed wing' yang akan digunakan untuk tinjauan dan pemetaan ke atas kawasan yang terjejas akibat gempa bumi Jumaat lepas. - Foto BERNAMA*

**KUNDASANG:** Kementerian Komunikasi dan Multimedia bekerjasama dengan Malaysian Emergency Response System (MERS 999) melakukan tinjauan dan pemetaan ke atas kawasan yang terjejas akibat gempa bumi Jumaat lepas dengan menggunakan unit UAV (kenderaan udara tanpa pemandu) atau dron.

Menterinya, Datuk Seri Ahmad Shabery, Cheek berkata dron yang digunakan dalam proses itu berkapasiti tinggi yang boleh melakukan penerbangan sehingga dua jam.

'Pada hari ini, kita akan uji satu daripada cara hendak buat penilaian kerosakan yang berlaku di kawasan ini dan kita akan menggunakan UAV untuk membuat perkara itu.'

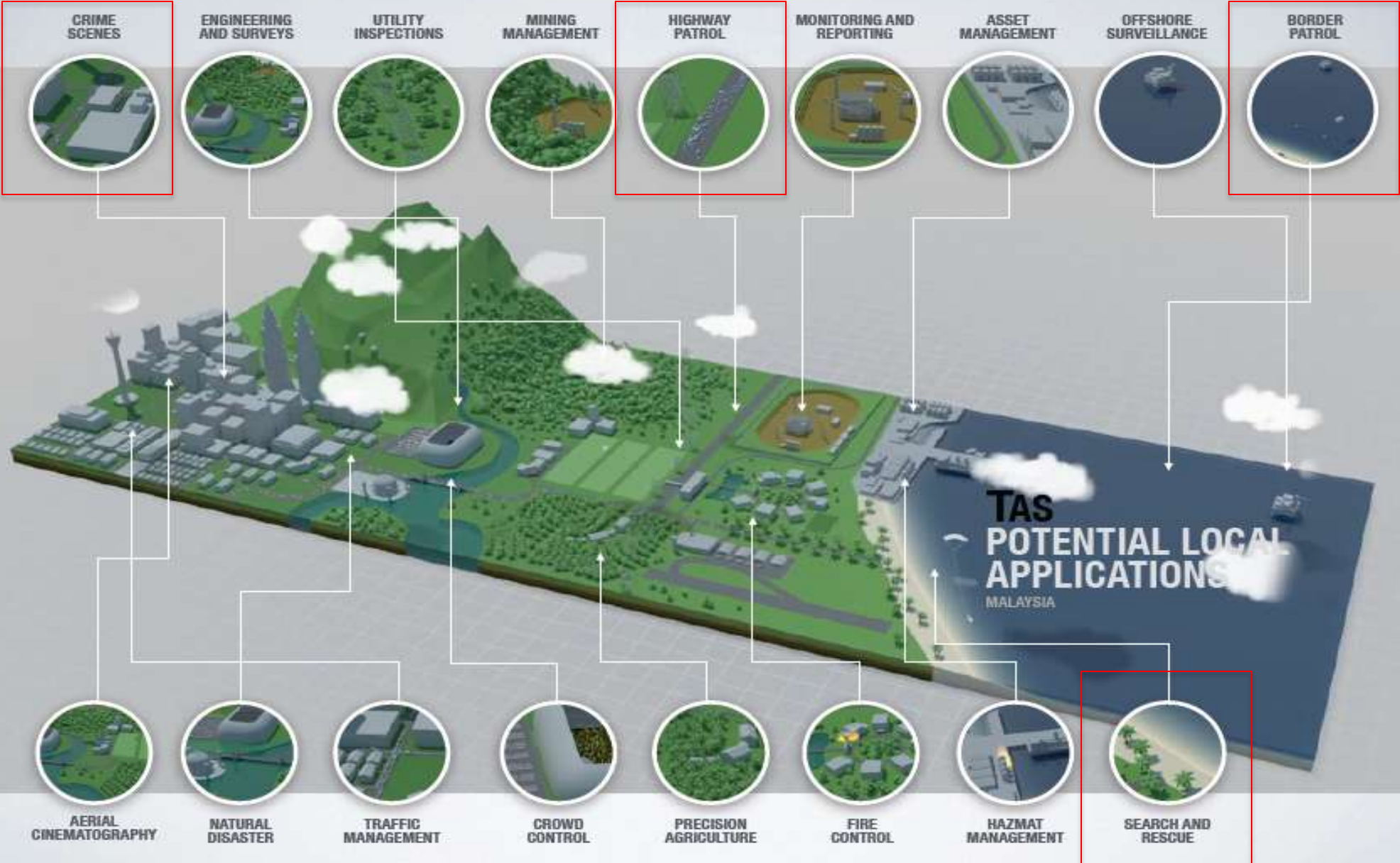


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# TAS Solutions for Multi Sectors





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# TAS Solutions for Public Safety



Forest Fire Monitoring



Hazardous Material Management



Flood Monitoring



Haze Monitoring



Border Monitoring



Crowd Monitoring



# AGENDA

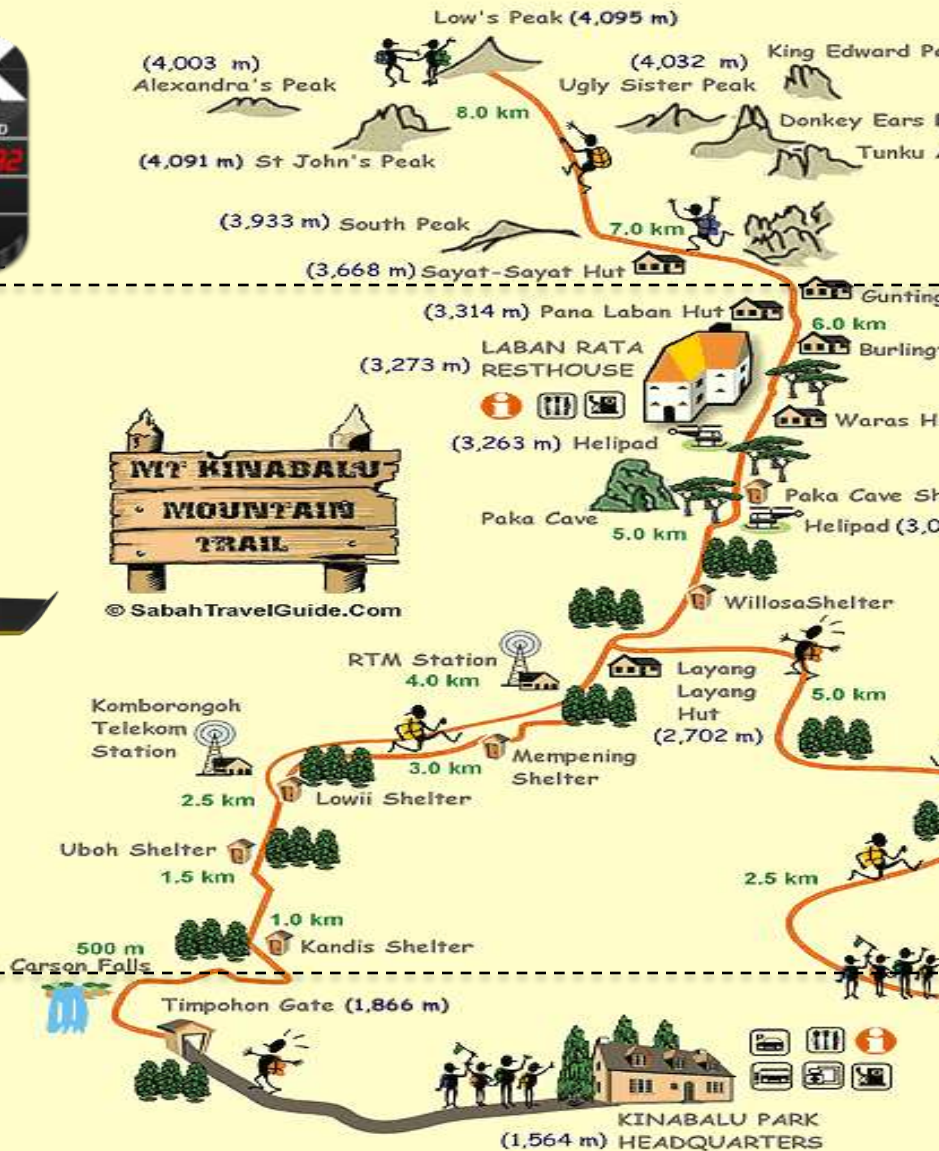
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## CASE STUDY

1. Earthquake Monitoring in Sabah
2. Flood Monitoring in Kelantan & Terengganu
3. Forestry Surveillance in Sarawak
4. Land Trespassing in Pahang and Sarawak

# 1) Earthquake Monitoring in Sabah



**BH ONLINE** UTAMA SEMASA POLITIK SUKAN DUNIA BISNES JENAYAH

JUMAAT, 5 JUN 2015 @ 6:10 PM

## Gempa bumi Sabah: 15 gegaran susulan sehingga 2 petang

Tweet 18 Like Share 2.4k 8+1 0

KESAN runtuhannya di Gunung Kinabalu berikutan gegaran gempa bumi. - Foto Edmund Samuning

KOTA KINABALU: Sekurang-kurangnya 15 gempa susulan kecil dilaporkan di Ranau sehingga jam 2 petang tadi selepas gempa bumi sederhana dengan kekuatan 6.0 pada skala Richter, pagi tadi.

Menteri Sains, Teknologi dan Inovasi, Datuk Dr Ewon Ebin, berkata Jabatan Meteorologi menjangkakan gempa susulan itu kemungkinan akan terus berlaku hingga struktur tanah di kawasan terbabit stabil.

"Sehubungan itu, saya meminta rakyat Sabah khususnya di Ranau dan kawasan sekitar yang terjejas, agar mengambil langkah berjaga-jaga dan bertindak secepat mungkin sekiranya berlaku gegaran susulan bagi mengelak kejadian tidak diingini," katanya menerusi kenyataan sebentar tadi.

KUNDASANG GOLF CLUB

"Take off"



# 1) Earthquake Monitoring in Sabah

## Objective :

1. Analyze and damage assessment in Laban Rata.
2. Digital map for post disaster planning.

Parameter	Information
Location	Laban Rata
Flight Distance	21 KM
Date	12 June 2015 6 am – 8 am.
Time taken	2 hours
Type of UAV	Fixed Wing
Height of flight	11,000 feet@ 3,350 M
Area of mapping	4,272 acre



# 1) Earthquake Monitoring in Sabah

Mount Kinabalu

Laban Rata

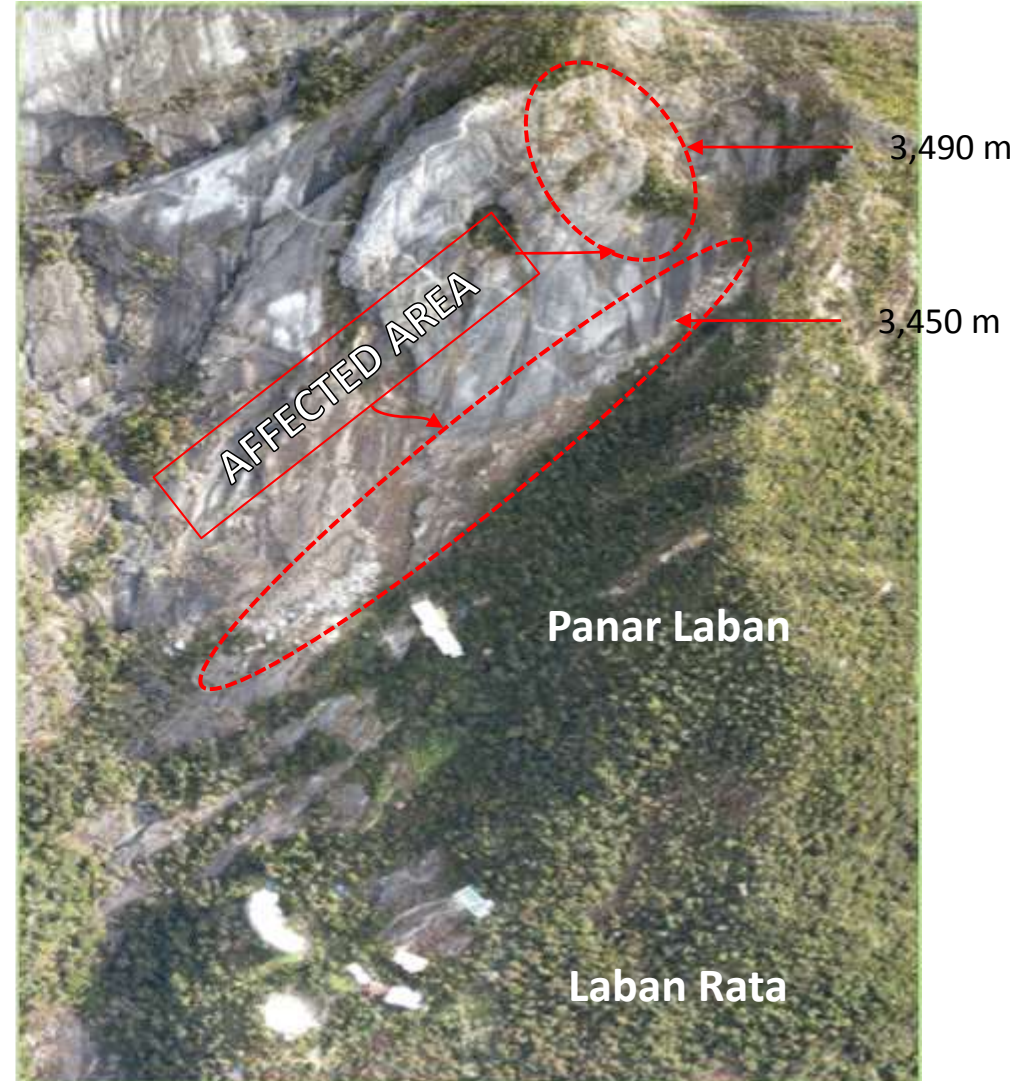
Area of digital mapping:  
4,272 acre

# 1) Earthquake Monitoring in Sabah

BEFORE



AFTER





# 1) Earthquake Monitoring in Sabah



Panar Laban



# 1) Earthquake Monitoring in Sabah



BEFORE



AFTER

# 1) Earthquake Monitoring in Sabah



## 2) Flood Monitoring in Kelantan & Terengganu



# 3) Forestry Surveillance in Sarawak



Venue: Rambungan, Sarawak  
 For Agency: Jabatan Perhutanan Sarawak  
 Date: 4/2/2015



**BH** 18 SEPTEMBER 2011 JUMAT NASIONAL 21

**'Lanun rimba' terkejut diintai drone**

**Kaedah terkini auasi hutan dalam operasi perangi kegiatan balak haram**

**Ini yang kita mahukan... biar mereka tahu mereka sedang diperhatikan dari tidak boleh melakukan sebarang perkara sewenang-wenangnya**

**Jarcekap Bahagian Pengawasan dan Pengangkutan JHS**

**Anggota JHS memeriksa balak**

**Bekas Menteri YAM**

**Hull di dua ekor**

**Hull dan Pua**

**Helikopter memudahkan pengangkutan kayu**

**Anggota JHS memeriksa balak** di kawasan tempung sepinggir Sungai Rajang.

**Bekas Menteri YAM** berkata anggota pengangkutan pengawasan sama ada balak terkandung di dalamnya adalah sebagai peraturan ditandakan seperti terdapat dalam lesen pemilikan yang dibuktikan.

**Hull di dua ekor** dan Pua berkata, perubahan ini akan membantu pihak berkuasa untuk memantau aktiviti di kawasan hutan.

**Hull dan Pua** berkata, perubahan ini akan membantu pihak berkuasa untuk memantau aktiviti di kawasan hutan.

**Helikopter memudahkan pengangkutan kayu** agar lebih cekap.

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**Helikopter memudahkan pengangkutan kayu** agar lebih cekap.



# 4) Land Trespassing in Pahang



Venue: Cameron Highlands, Pahang  
For Agency: Kementerian Sumber Asli dan Alam Sekitar  
Date: 8/3/2015





# Thank You

