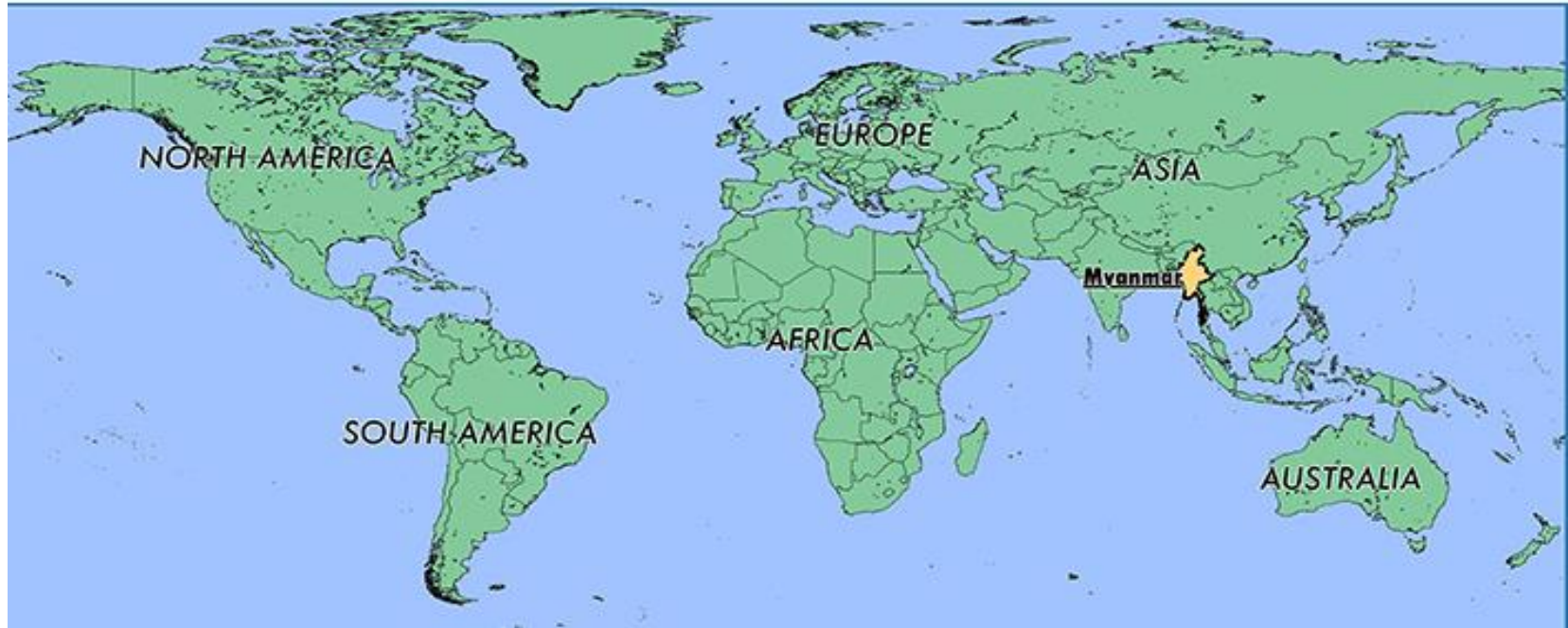


# Geo Information Research in Yangon/UCSY

- **Myint Myint Sein**



# Myanmar



- **Land Area:** 653,500 km<sup>2</sup>; **Water Area:** 23,078 km<sup>2</sup>

-**Total Area:** 676,578km<sup>2</sup>

**Population : 54,208,220** (30<sup>th</sup> March 2019)

- **Density :** 83 peoples per square kilometer.

-land borders countries: [India](#), [China](#), [Bangladesh](#), [Thailand](#), [Lao](#)



# Ministries & Universities

- MIMU
- Survey Department,
- Ministry of Forest
- Ministry of Agriculture
- Ministry of Housing
- .....
- Universities



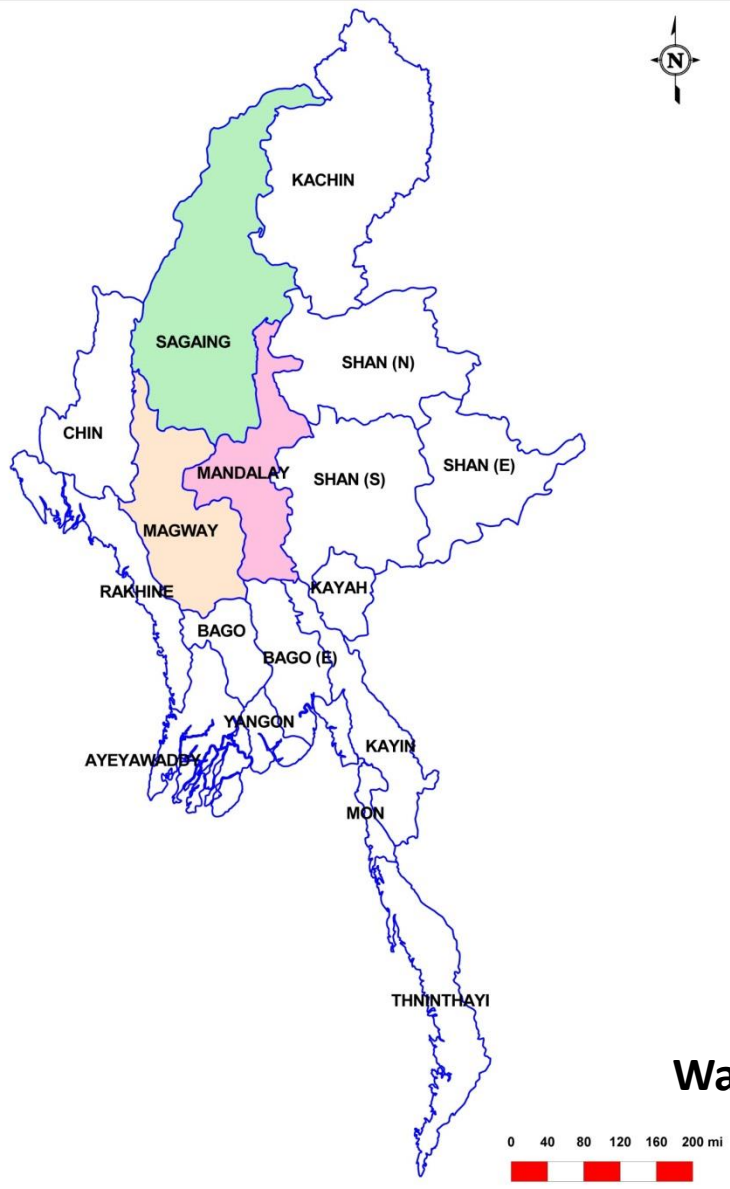
# Ministry of Agriculture, Livestock and Irrigation

## Department of Rural Development

- Water Supply Project - Government Budget, JICA, UNICEF
- Rural Electrification Project - Government Budget, World Bank, GIZ
- Ever Green Village Development Project - Government Budget
- Village Development Planning Project ( VDP) – Government Budget, Lift Fund
- National Community-Driven Development Project (NCDDP) – World Bank
- Enhancing Rural Livelihoods and Incomes Project (ERLIP) – ADB

# In 2008 and 2009, collected the WASH data supported by UNICEF.

Tube Well Database (3) Divisions in Myanmar



Tube Well Database (14) Townships



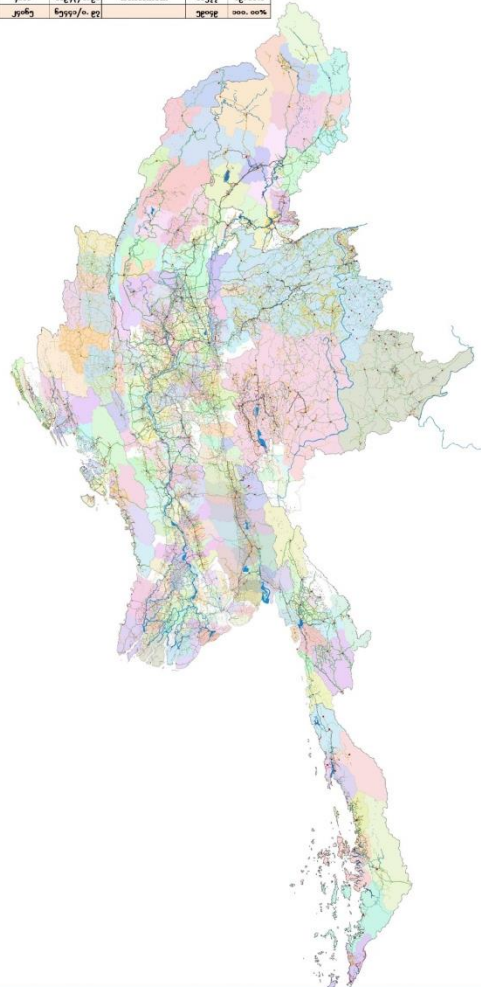
**Wash: Water supply, sanitation and hygiene**

# Rural Roads Village access levels (over 60000 miles)



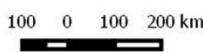
ပြည်နယ်/တိုင်းဒေသကြီး (၂၀၁၅-၂၀၁၆)ခု ဘဏ္ဍာရေးနှစ်ကုန်ရှိ ကျေးလက်လမ်းအခြေပြပုံ

စဉ်	လမ်းအမျိုးအစား	အလယ်	အတိုင်းအတာ (မိုင်/မာလ)	အသုံးပြုနိုင်သည့် အခြေအနေ	အတိုင်းအတာ	အသုံးပြုနိုင်သည့် ရာခိုင်နှုန်း
၁	ကျွန်းကုန်လမ်း	၈၅၇	၅၅၇/၁.၀၅		၂၃,၈၅၅	၃၅.၂၈%
၂	ကတ္တရာလမ်း	၅၅၇	၅၅၇/၁.၀၅	ရောင်းချမှု ဖွဲ့စည်းနိုင်	၂၃,၈၅၅	၃၅.၂၈%
၃	ကောက်လမ်း	၅၅၇	၅၅၇/၁.၀၅		၂၃,၈၅၅	၃၅.၂၈%
၄	ဝပ်/မမြေကုန်လမ်း	၅၅၇	၅၅၇/၁.၀၅		၂၃,၈၅၅	၃၅.၂၈%
၅	မမြေကုန်လမ်း	၅၅၇	၅၅၇/၁.၀၅		၂၃,၈၅၅	၃၅.၂၈%
၆	ပရိယာဇာလမ်း	၅၅၇	၅၅၇/၁.၀၅		၂၃,၈၅၅	၃၅.၂၈%
၇	ပြင်/မောင်း	၅၅၇	၅၅၇/၁.၀၅		၂၃,၈၅၅	၃၅.၂၈%
၈	မြို့	၅၅၇	၅၅၇/၁.၀၅		၂၃,၈၅၅	၃၅.၂၈%
၉	ရွာ	၅၅၇	၅၅၇/၁.၀၅		၂၃,၈၅၅	၃၅.၂၈%



**&nfnTef;csuf**

- ကျွန်းကုန်လမ်း
- ကတ္တရာလမ်း
- ကောက်လမ်း
- ဝပ်/မမြေကုန်လမ်း
- မမြေကုန်လမ်း
- ပရိယာဇာလမ်း
- ပြင်/မောင်း
- မြို့
- ရွာ



မန္တလေးတိုင်းဒေသကြီး (၂၀၁၅-၂၀၁၆)ခု ဘဏ္ဍာရေးနှစ်ကုန်ရှိ ကျေးလက်လမ်းအခြေပြပုံ

စဉ်	လမ်းအမျိုးအစား	အတိုင်းအတာ (မိုင်/မာလ)
၁	ကျွန်းကုန်လမ်း	၈/၃.၄၀
၂	ကတ္တရာလမ်း	၃၅၃/၅.၃၀
၃	ကောက်လမ်း	၁၃၀၃/၀.၄၃
၄	ဝပ်	၅၄၄/၅.၀၀
၅	မမြေ	၂၃၅၉/၄.၂၆
၆	စုစုပေါင်း	၄၅၅၃/၆.၃၉

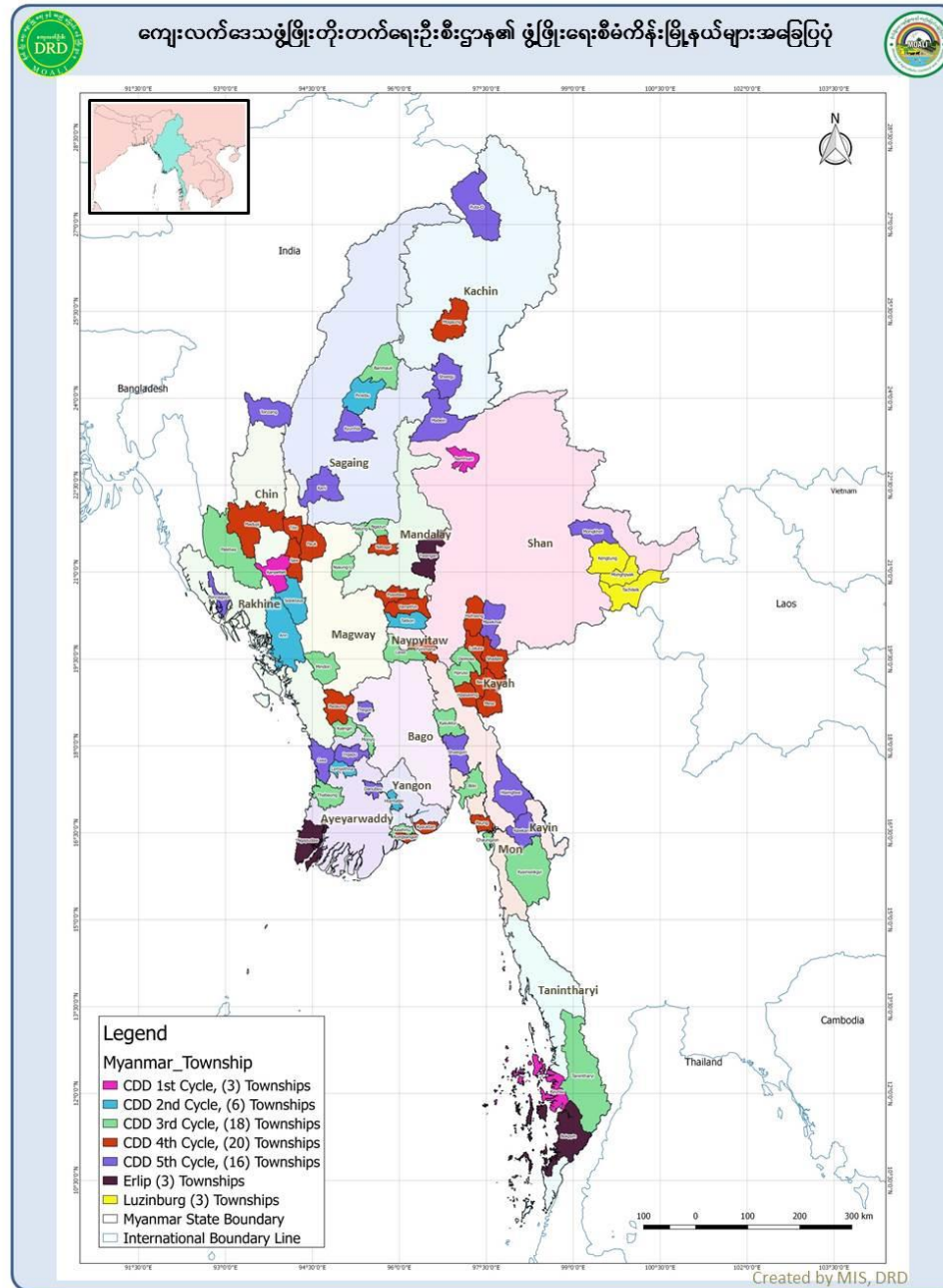


**ရည်ညွှန်းချက်**

- ကျွန်းကုန်လမ်း
- ကတ္တရာလမ်း
- ကောက်လမ်း
- ဝပ်/မမြေကုန်လမ်း
- မမြေကုန်လမ်း
- ပရိယာဇာလမ်း
- ပြင်/မောင်း
- မြို့
- ရွာ



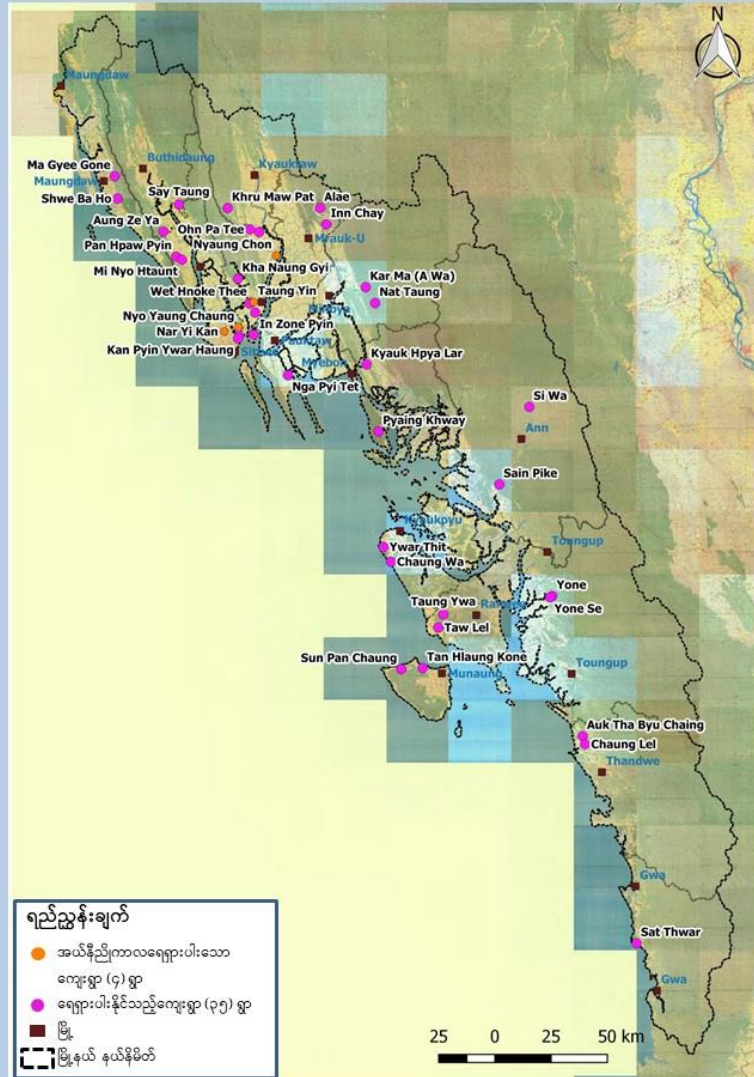
# Development Projects Townships



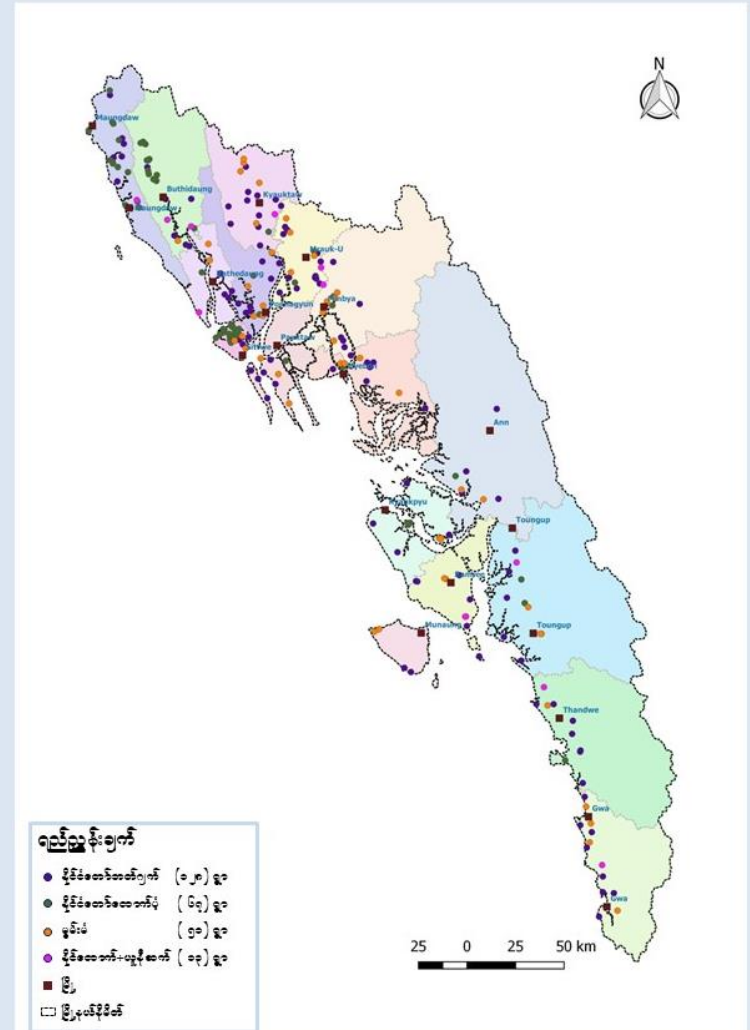


# Water Supply Project

ရခိုင်ပြည်နယ်အတွင်းရှိ ရေရှားပါးသော ကျေးရွာများပြပုံ



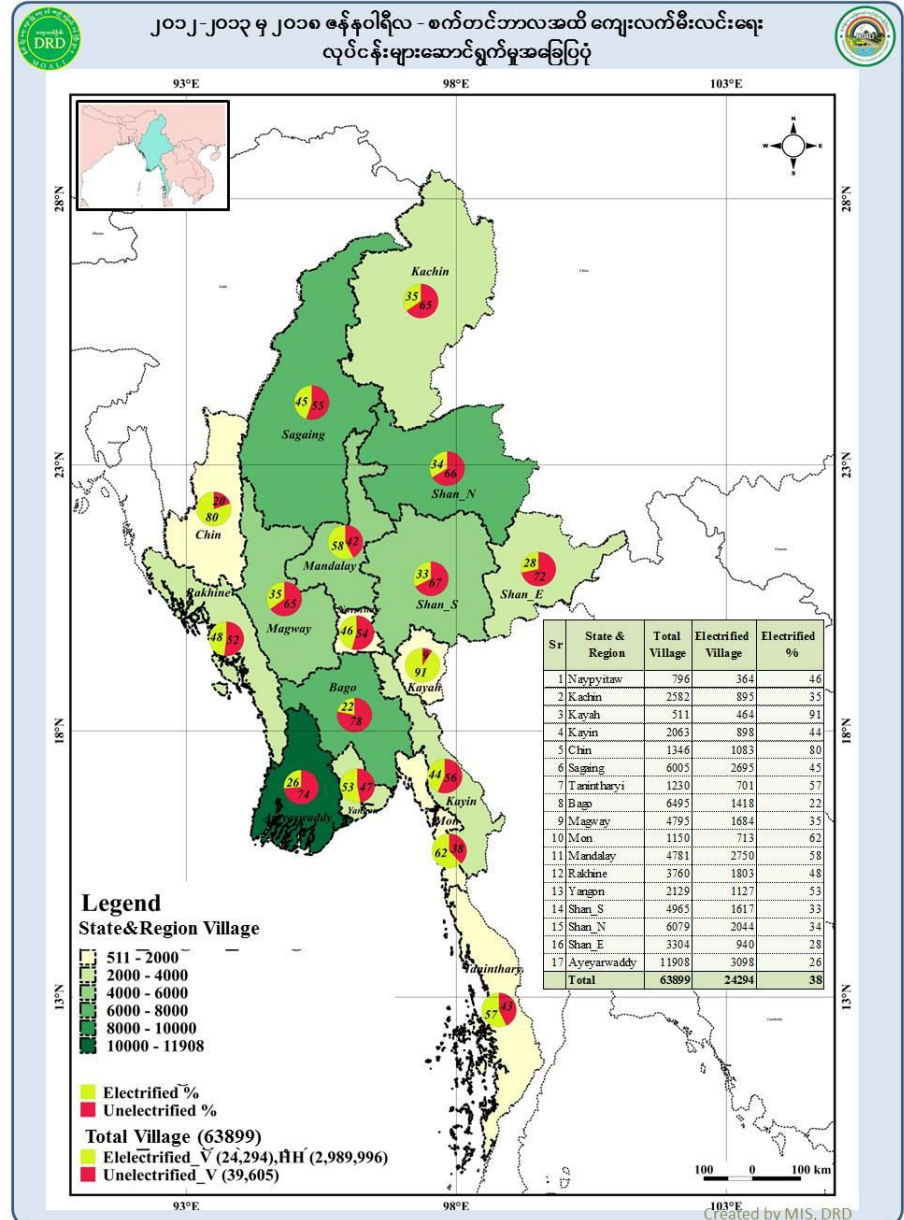
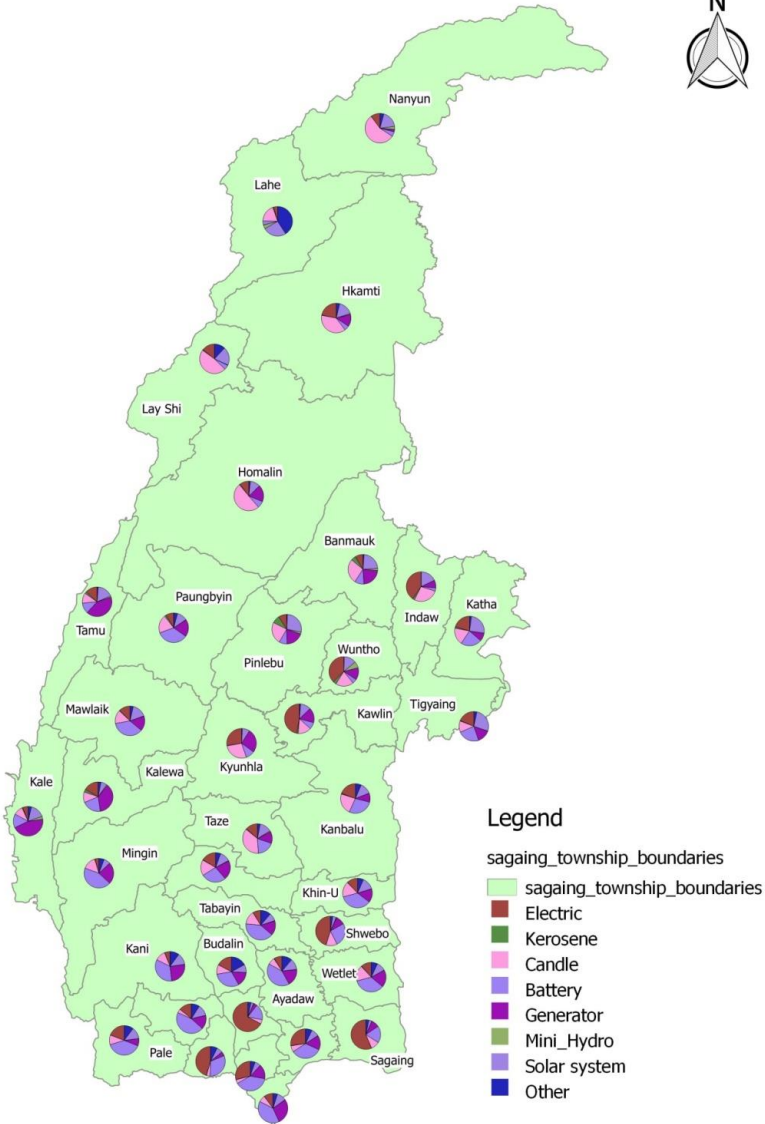
၂၀၁၇ - ၂၀၁၈ ခုဘဏ္ဍာရေးနှစ် ရခိုင်ပြည်နယ်အတွင်းရှိ ရေပေးရေးလုပ်ငန်းများ အကောင်အထည်ဖော်ဆောင်ရွက်မှုပြမြေပုံ





# Rural Electrification Project

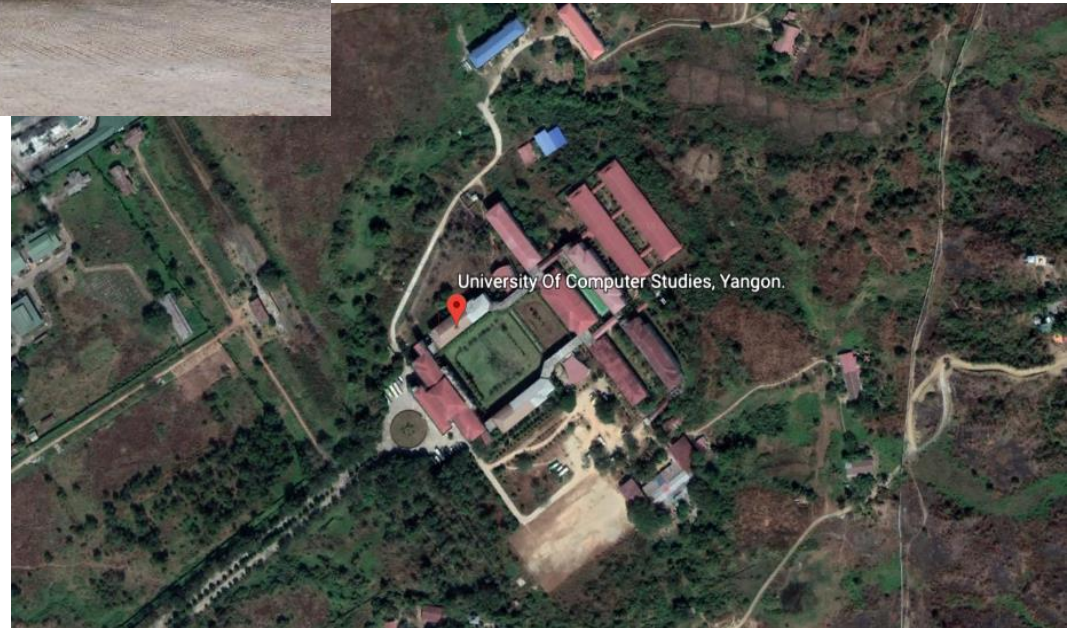
Map of Pie Chart for Rural Electrification in Sagaing Region





ရန်ကင်းတက္ကသိုလ်

University of Computer Studies, Yangon



Started in  
2011



<http://www.ucsy.edu.mm/GoGISLab.do>

The research focuses on



**Location Based Services,**



Traffic Management, Security Monitoring,



Environmental Changes Detection,



Disaster Mitigation,



Mobile Application,



Smart Tourism and so on.



# Extracting Surrounding Services System

- offer many advantages to the users to get more useful information near to their location.
- allow users on the go with access to services from portable devices.

**Extracting Surrounding Services System**

Enter Your Current Location: Shwe Dagon Pagoda

Range You Want (m): 1000

Search For: Restaurant

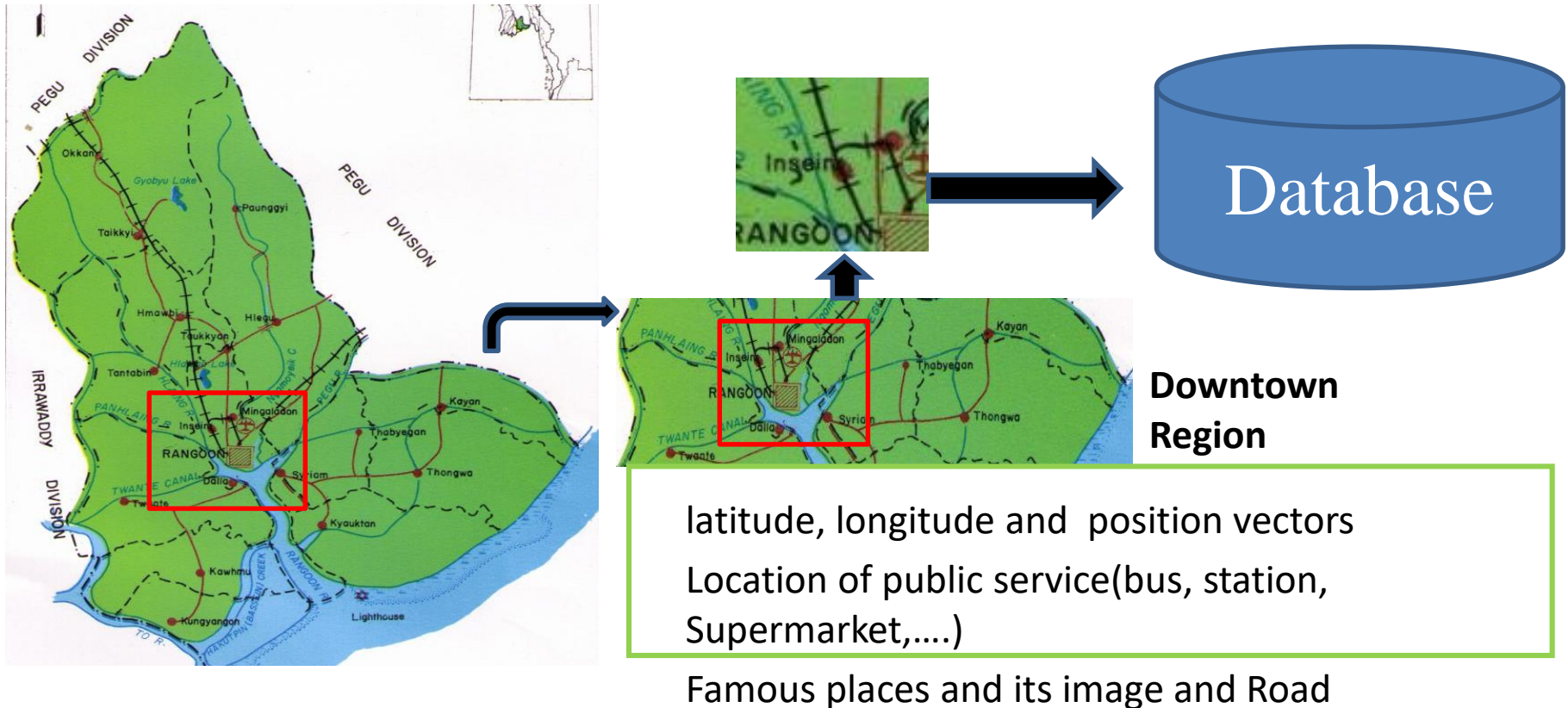
**Request**

Your Desire Area Is In This Bounded.			
Latitude (North)	16 Degrees 47 Minutes 21.83999 Seconds N...	16 Degrees 48 Minutes 26.89998 Seconds N...	
Longitude (East)	96 Degrees 8 Minutes 24.29858 Seconds E...	96 Degrees 9 Minutes 31.84142 Seconds E...	

Services In Rectangular Range.			Services In Circular Range.		
	Services	Distance from User (Meters)		Services	Distance from User (Meters)
1	Aung Thukha Myanmar Restaurant	861.75	1	Signature Restaurant	824.96
2	Dolphin Restaurant	1047.7	2	Vista Bar	847.91
3	Oriental House	905.35	3	Aung Thukha Myanmar Restaurant	861.75
4	Signature Restaurant	824.96	4	Oriental House	905.35
5	Vista Bar	847.91			

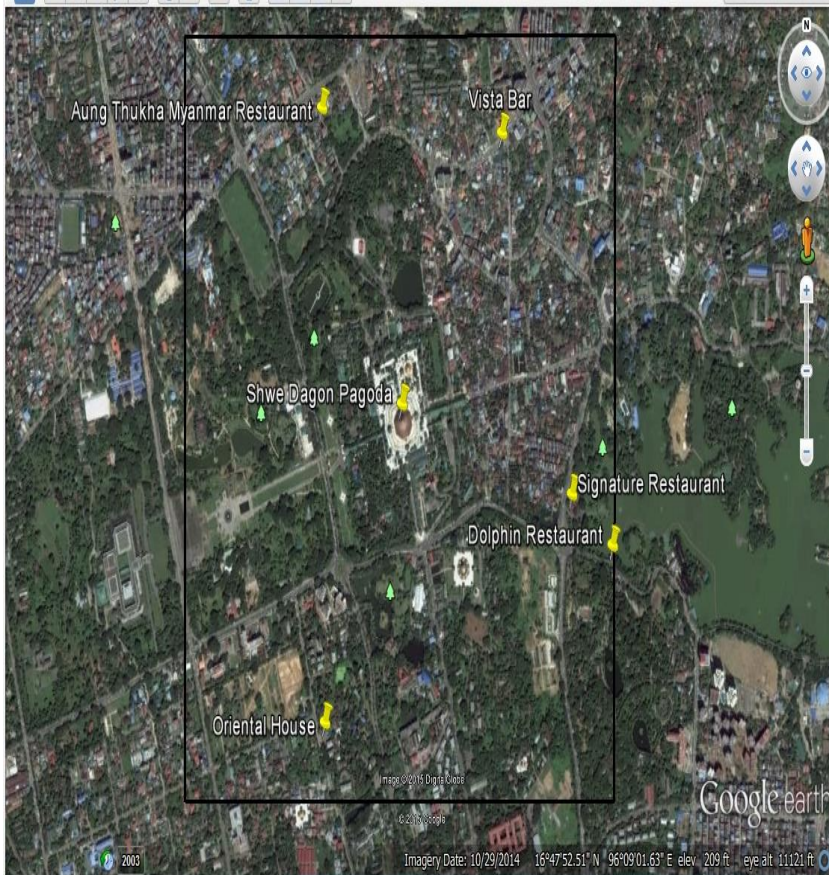
# Create Database

🌐 For creating the image data sets of YANGON city, the downtown area of Yangon is divided into 4x,xxx parts of sub images from Google Earth. The parameters of each part is approximately 0.15 square kilometer.

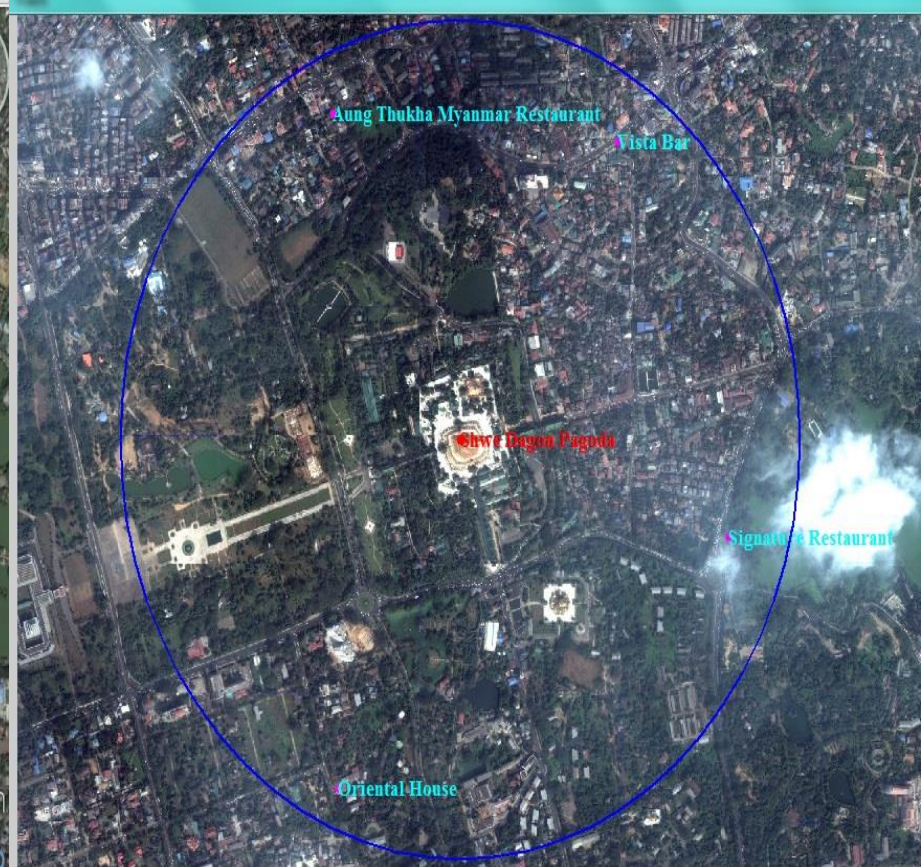




# Range Searching System

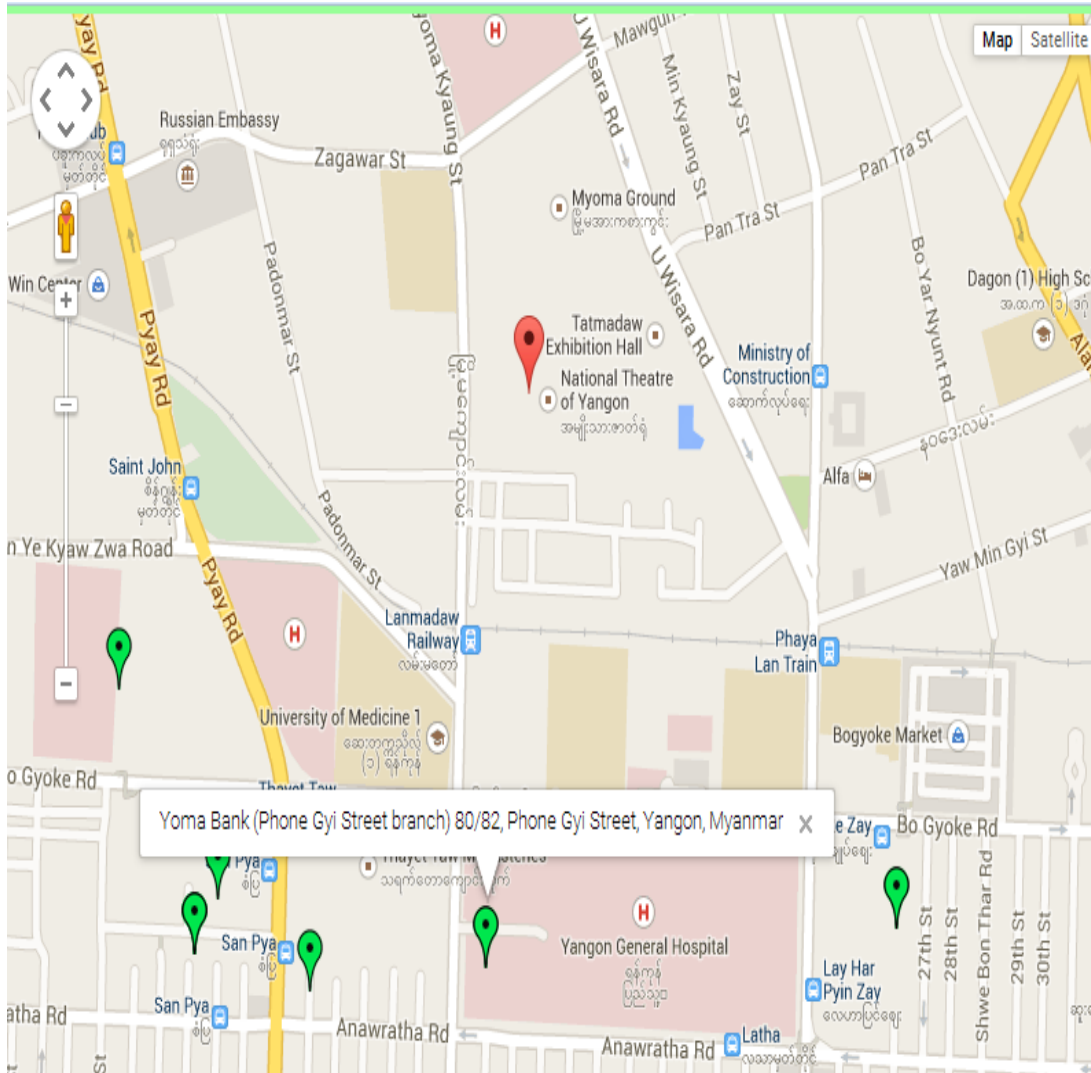


Rectangular Range



Circular Range

# Result of the Searching Service



**User Current Location**

Latitude:

Longitude:

Address:

---

Keyword:

Range Query  ( Range in km)

KNN Query  (Number of Objects)

Sort By :

---

Name	Address	Phone No.	Distance (Km)
Myanmar Oriental Bank (PhoneGyiLan branch)	110, Phone Gyi Lan, Yangon, Myanmar	01-222975	0.67305
Yoma Bank (Phone Gyi Street branch)	80/82, Phone Gyi Street, Yangon, Myanmar	01 211563	0.67305
Myawaddy Bank (LanThit Street branch)	59, Lan Thit Street, Yangon, Myanmar	01-647500	0.76342
Co-Operative Bank (CB Bank) (Lanmadaw branch)	797, Maha Bandoola Road, Yangon, Myanmar	01 212125, 222982-3	0.78371
Yoma Bank (Lan Thit Road branch)	38, Lan Thit Road, Yangon, Myanmar	01 640020	0.78562
Ayeyarwaddy Bank (Lanmataw branch)	778 , Corner of Mahabandoola Street and 14th Street, Yangon, Myanmar	01 218467-471	0.85793



# Location and Transportation Services

Location –based services provide the user for getting day to day information like city routes, point of interest (POI), public transport schedules, etc.

Famous Places



Bus Stop



which buses need to take



Restaurant



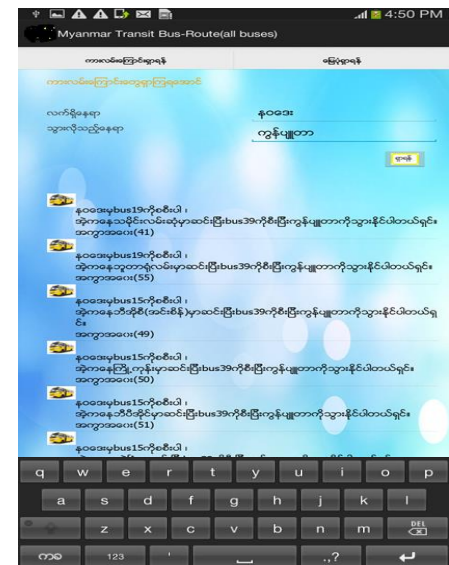
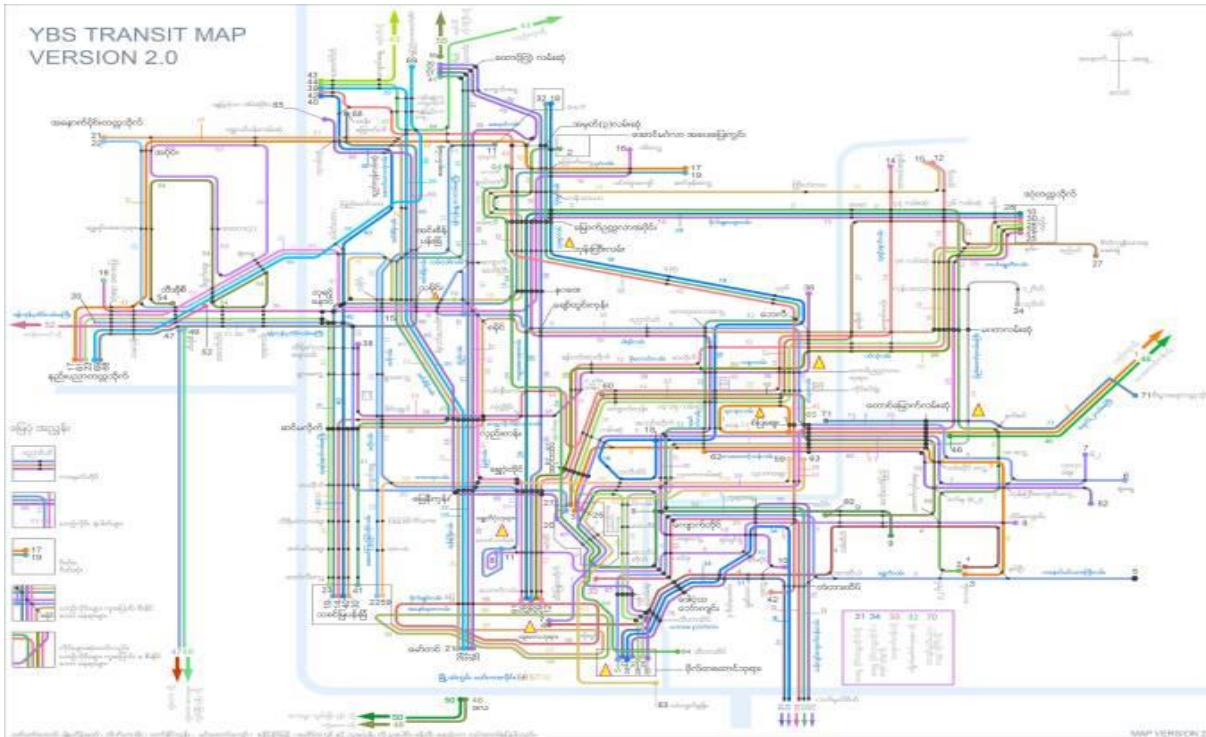
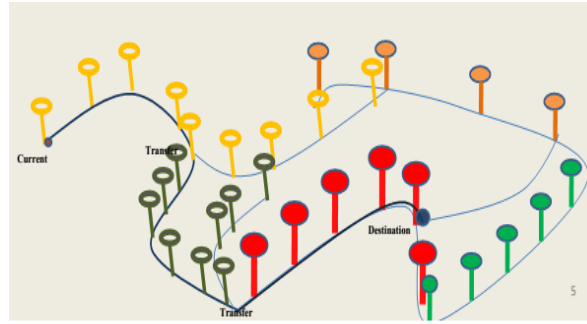
Market



Hotel

ATM  
Hospital  
Embassy

# Android Application for Bus Transit Route





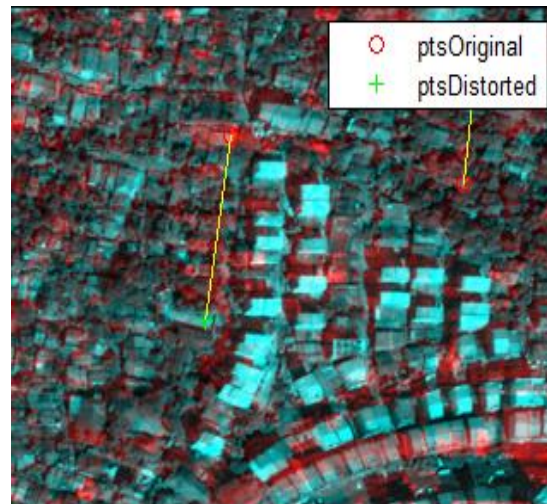
# Urban Change Detection

The morphological operation is used to extract building feature with the use of modified morphological building index (MBI).

Speed Up Robust Feature (SURF) method is used for image registration and tested area of this method is shown in following figure.



(a) Putative matched points  
(including outliers)



(b) Matching points  
(Inliers only)

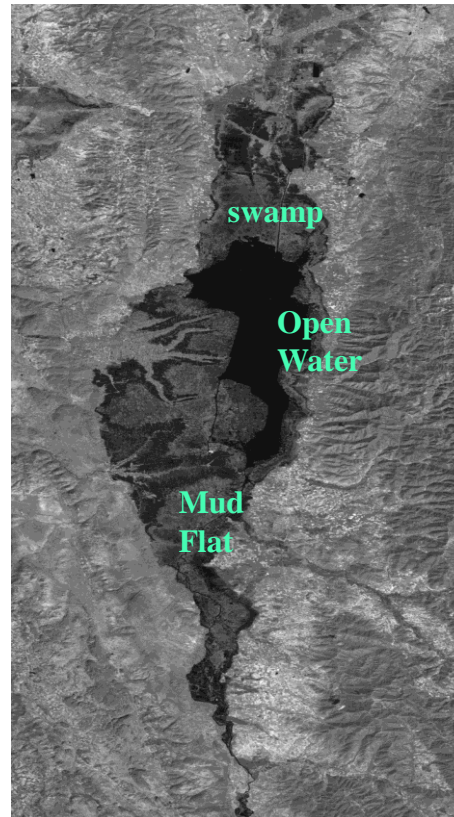


(c) Registered Image



# Investigating the Open Water Area

The contemporary changes in open water surface area of **Inlay Lake** are investigated from satellite images (See following Figure).



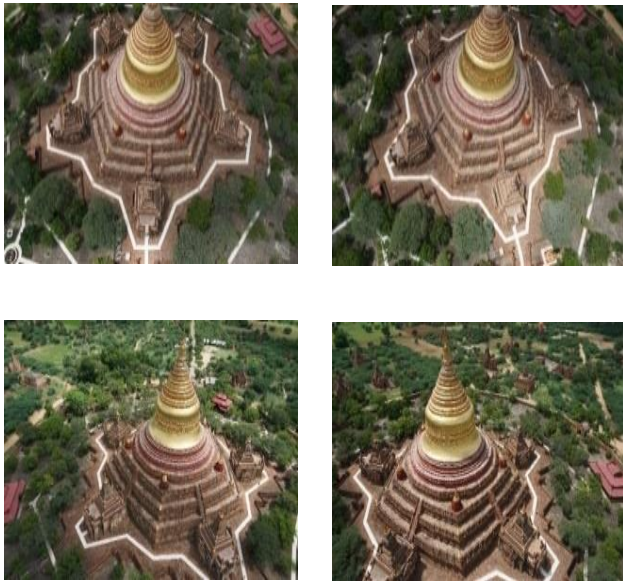




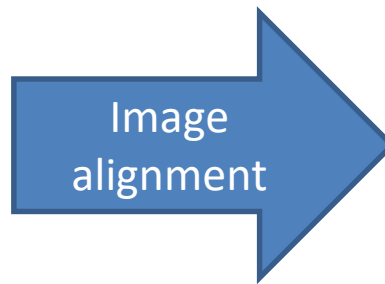


# Generating the 3D Map

Construct 3D model to provide renovate



UAV Images



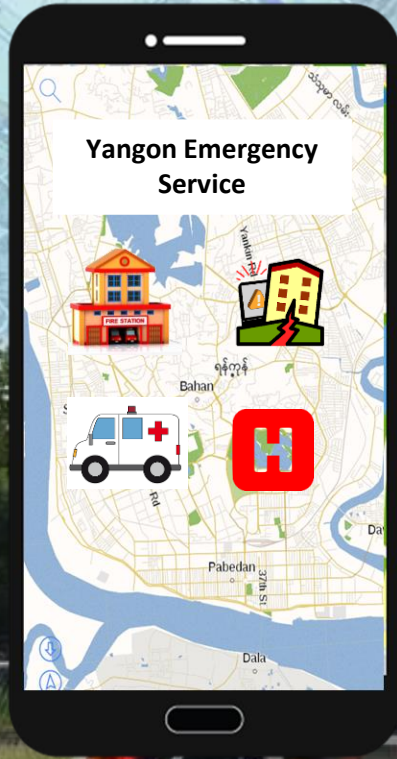
3D Model



# Disaster Mitigation

## Emergency Respond System

### Optimal Route Finding to support Fire Emergency Service



Spatial DB



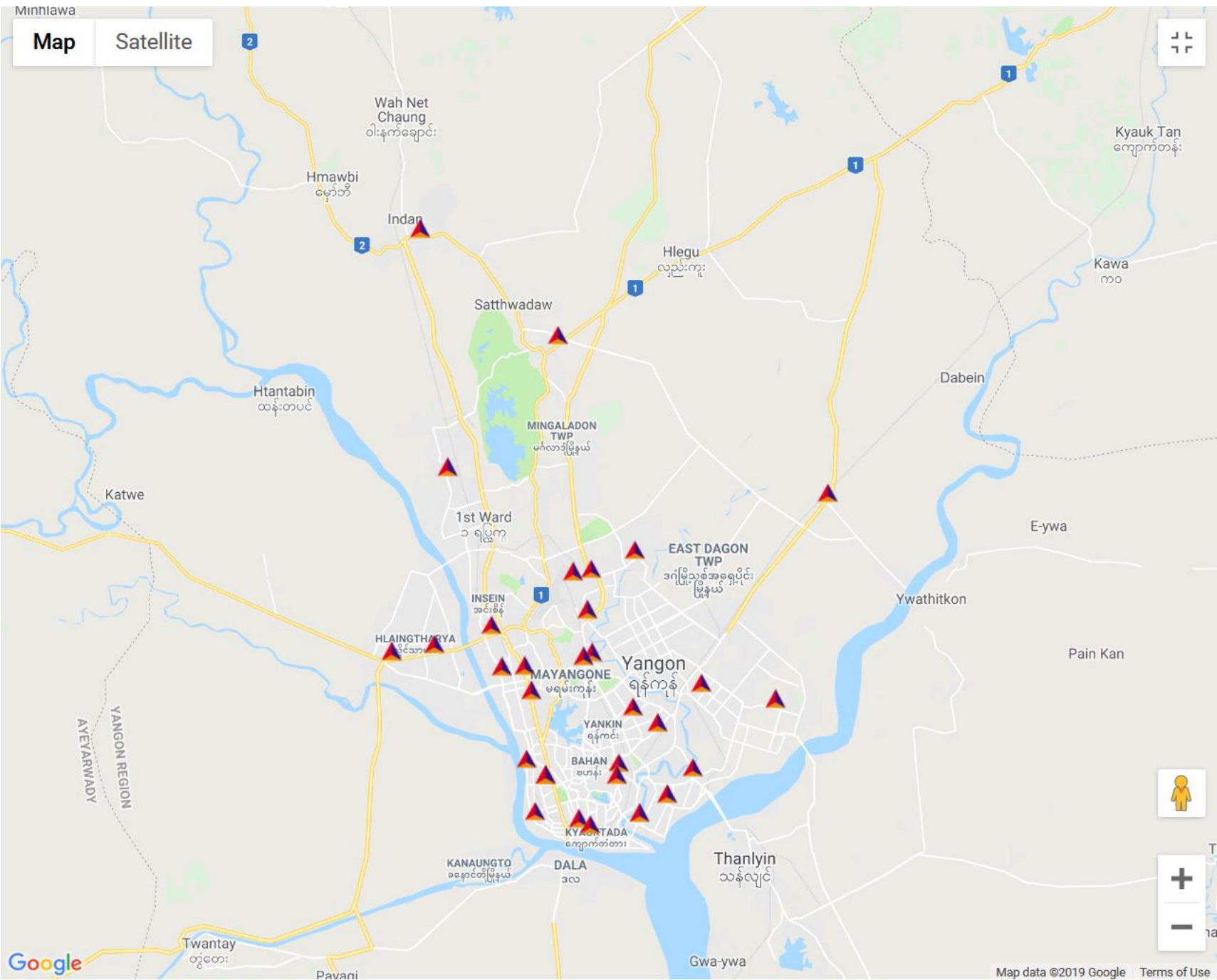
Location of Emergency services



Vector map of Yangon



Fire Station Name	lat	lon	Address	Description
Central Fire Station	16.779591	96.152645	No.129, Sule Pagoda Road, Kyauktada Tsp, Yangon	01-252011
Hmawbi	17.106246	96.060307	Yangon_Pyi Road, Tatfone Quard, Yangon	01-620030
Kyauktada Fire Station	16.776082	96.158498	129/131, Sule Pagoda Rd., Middle Block	01-252022,01-252011,191,01-384420,
Ahone Fire Station	16.783417	96.127014	138/150, Strand Rd.	01-220802
Kyeemyindaing Fire Station	16.812479	96.122159	193/198, KyeemyindaingKannar Rd., Corner of Hledan St.	01-534825, 09- 73164126
Sanchaung Fire Station	16.804094	96.133036	157/159, Bargayar Rd.	01-527099,01- 536689
Tarmway	16.803593	96.173997	373, BanyarDala Rd, Tarmway Tsp	01-554778, 01-554841,01- 554893
Tarmway_B	16.810659	96.174664	Thamain Bayan Rd.	01-554893
Dawbon	16.782553	96.187315	Dawbon Fire Station,	01-553021
Thaketa	16.793132	96.203339	ShukhinThar Rd., Corner of AyeyarWun Rd.	01-547040
South Okkalapa	16.841023	96.183119	Yadanar St, South Okkalapa Tsp	01-699149
Thingangyun	16.832601	96.197814	193/198, KyeemyindaingKannar Rd., Corner of Hledan St.	01-562677
North Okkalapa A	16.895225	96.157143	May Darwi Rd., Corner of May Darwi Rd.	01-688149
Shwpaukkan	16.928111	96.184485	Bagan Rd., Corner of Mingalar St.	09 -421080164,01-699151
North Okkalapa	16.917345	96.159221	Thu Dhamar Rd., Near North Okkalapa Circle,	09 -425356252
Waibargi Fire Station	16.916289	96.14914	No 360A, Yadanar Road, Waibargi 8 Quard	01-699378
Insein Fire Station	16.886802	96.101259	Hlaing River Rd	01-640070, 01-640987
Hlaing	16.850763	96.124874	Yangon-Insein Rd., Hlaing Tsp	01-519578
Mayangon	16.864666	96.120911	Yangon-Insein Rd, Hlaing Tsp	01-661501
Bayin Naung	16.863489	96.107613	BayintNaung Rd, Mayangone Tsp	01-681648
Municipal Fire Bridage				
Mayangon	16.871611	96.159921	Oak PonSeik St.	01-667281
FireSerives Department (HQ)	16.869806	96.154904	Pin Lon Rd.	01-,584060
Dagon Seikkan	16.845701	96.265748	Kwan Art Thar Min Thar St	09 32046428, 09 73120294, 09 73175954
Hlaingtharyar_B	16.875918	96.068839	Nyaung Tone Rd	01-645017
Mingalardon	17.046965	96.140114	Yangon-Bago Rd.	09 448011101, 01-600178
Dagon (South)	16.854688	96.223212	Aung Zeya St	01-590071
Dagon (North)	16.959331	96.295907	BayintNaung St	01-599467
Shwepyithar	16.97397	96.076451	BayintNaung Rd., Near Say Khan Bus Stop	01-611014
Thaketa_B	16.807593	96.21824	Myin Taw Thar Rd., Corner of Zingama Rd.	09 -5154137, 556834
Hlaingtharyar	16.87198	96.043671	Nyaung Tone Rd., Front of Sanayma Bus Stop,	01-707550, 09 73206341



Map

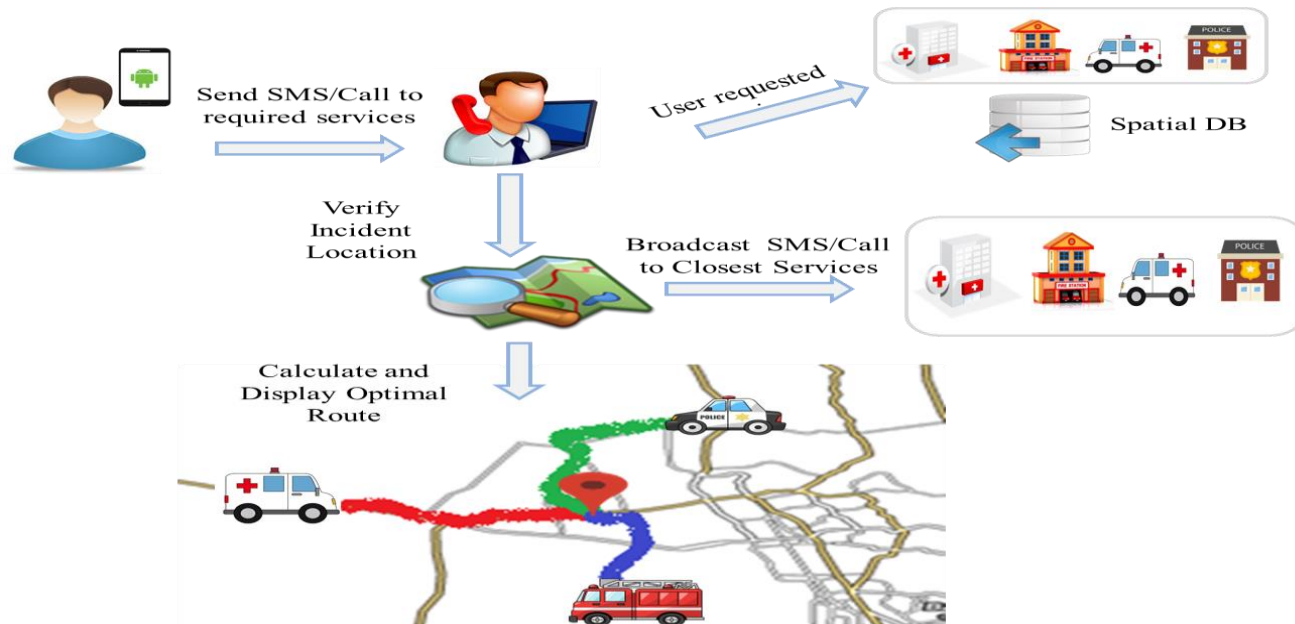
Satellite



# Emergency Response System

The development of efficient optimal route finding system for urgent need of emergency services is very important to save the valuable lives and property.

Because of the weak road network infrastructure, the emergency vehicles face many problems to go the incident location in time.

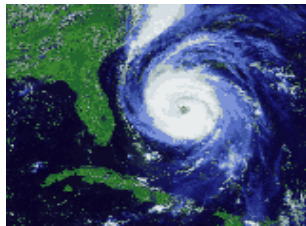




# Warning Alarm System

The multi-date satellite satellite images acquired by NASA-Landsat7 are applied in our research works.

GIS and hydrological modeling can be used to predict and manage such emergency events for humans' societies.



•storm direction detection  
•flooding estimation

Multi-date Satellite image  
(NASA-Landsat7) / Images  
acquired by sensor and  
database

Broadcast Disaster  
Alert



Tsunami,  
Cyclone  
Flood



































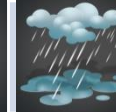








Received Disaster  
Notification

Open GPS to get  
current location



Show the Route to  
go Safety Place

# Myanmar Hazard Calendar

Hazard	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cyclone												
High Temperature												
Low Temperature												
Drought												
Squalls and Thunderstorm												
Flood												
Heavy Rain												
Monsoon Depression												
Hail												

# Mone Dam

- Northern two miles from Sadoketaya town.
- Situated on Mone Stream
- Water catchment area is 1467 sq mile
- Rainfall amount 47"
- Average height level of water is 125'
- Area of Dam - 4320' (length) × 200' (height)
- Water diversion tunnels - 36' (diameter) × 3625' (length)
- Mone creek can be overflow water due to torrential rain from Chin hill and Rakhine hill .





# Conditions of Flood in Mone Dam

- Heavy Rain in Rakhine Hills and Chin Hills
- Causing Storm in Bay-of-Bengal
- Dam cannot outlet the water from the spill way when the Ayeyarwaddy River is full of water
- Heavy Rain in Banglades
- If it will break or overflow water, affect on about 300 villages and two towns in that region.
- Its alarm level is 540' and Dam crack level is 560'.



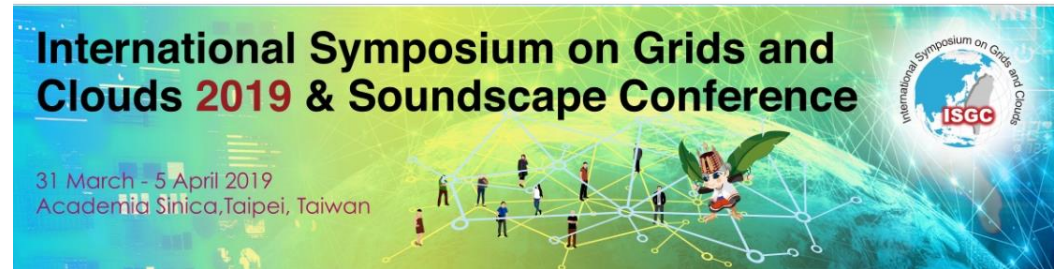
Figure2. Inflow water of Mone Dam

---

UND project (Deeper Understanding of Natural Disasters) funded by

Asi@Connect

- Members:
- (1) Vietnam
  - (2) Bangladesh
  - (3) India
  - (4) UCSY(Myanmar)
  - (5) Philippines
  - (6) Malaysia
  - (7) Thailand
  - (8) Taiwan



### Environmental Computing Workshop

Date: Sunday, 31 March 2019

Time: 09:00 – 17:30

Venue: 3F, Building for Humanities and Social Science, Academia Sinica



# Land Sliding

## Monitoring Landslide Prone Area using Internet of Things





# Lab Experiment



Raspberry pi 3 B



LCD Monitor



Soil Moisture

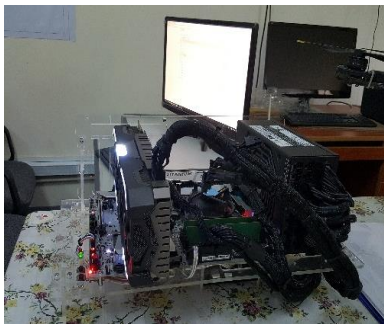


MCP 3008



## Fluidization of Slides

- Loosely Packed materials
- Shear failure
- Soil Failure
- Liquefaction in denser soil by heavy rain falls



- GPU



# အခြေခံပညာ ကျောင်းများ၏ School Mapping ကို မိုဘိုင်းနည်းပညာဖြင့်ထုတ်လုပ်ခြင်း

(Android Application of School Mapping for Department of Basic Education)

GIS Lab  
University of Computer Studies, Yangon, Myanmar

The education in Myanmar is principally managed and supported by the Ministry of Education(MOE). Basic education sector contains theElementary school education, Lower Secondary school education (Middle school) and Upper Secondary school education (High school). More than 45,600 basic education schools are generated by the government in the whole Myanmar.

The school mapping is essentially required to detect and accomplish the educational facilities of the schools. The android application of school mapping is developed to check easily and perform the investment decisions by the government. The SQLite database is applied for data storage.

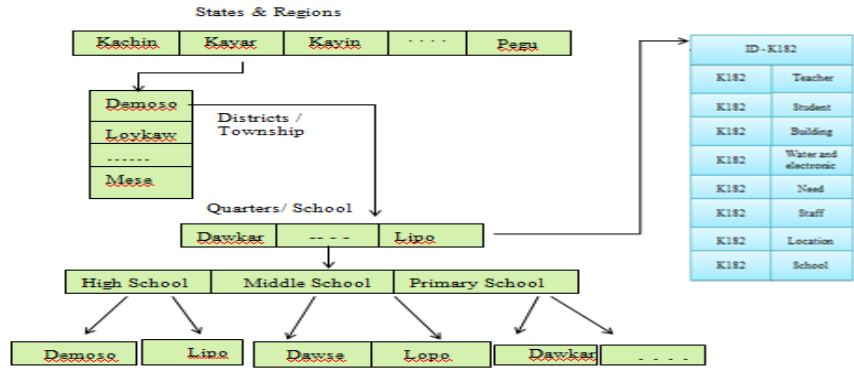
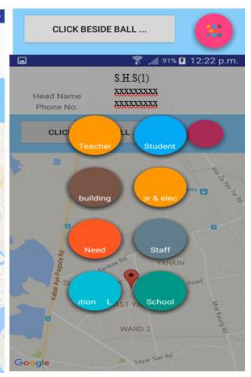
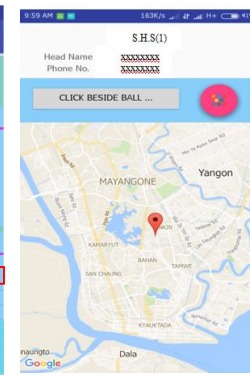
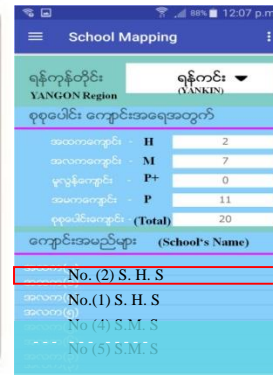


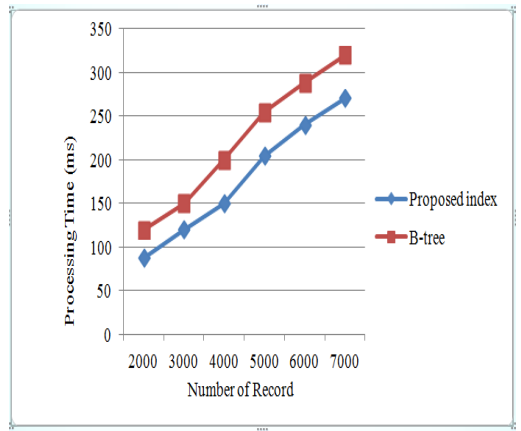
Figure 4: Index Structure for school Mapping



ကျောင်းအမျိုးအမည်	ကျား (Male)	မ (Female)	စုစုပေါင်း (Total)	တောင်ခန်း (Room)
အထက်တန်း (G-10)	-	-	-	-
အလယ်တန်း (G-9)	-	-	-	-
မြန်မာတန်း (G-7)	-	-	-	-
အောက်တန်း (G-5)	-	-	-	-
စုစုပေါင်း (Total)	-	-	-	-

ကျောင်းအမျိုးအမည်	ကျား (Male)	မ (Female)	စုစုပေါင်း (Total)	တောင်ခန်း (Room)
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အလယ်တန်း (G-9)	-	-	-	-
မြန်မာတန်း (G-7)	-	-	-	-
အောက်တန်း (G-5)	-	-	-	-
စုစုပေါင်း (Total)	-	-	-	-

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မြန်မာတန်း (G-7)	-	-	-	-
အောက်တန်း (G-5)	-	-	-	-
စုစုပေါင်း (Total)	-	-	-	-



The collaborative Research projects of GIS Lab., with some ASEAN countries are as following:

1. Software Defined System on Disaster Mitigation and Smart Cities (ASEAN IVO-project 2016~2019)

Members: Malaysia, Singapore, Thailand, Myanmar(UCSY),Vietnam, Philippines, Japan





## 2. Cambodia NerveNet Field Testing (Operation Management and Content Development to Promote Connectedness of Cambodia Rural Area)

(ASEAN IVO-project, 2016~2019)

Members:

National Institute of Posts, Telecommunications and ICT(NIPTICT),

University of Computer Studies, Yangon(UCSY), Myanmar,

National Institute of Information and Communications Technology(NICT)



# Smart Museum



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EXHIBIT ITEM

The collections in the Shwedagon Pagoda museum include sacred relics, images of Shakyamuni Buddha, wish-fulfilling trees, and offering vessels made of precious metals. Obj...

The Shwedagon Pagoda museum is one of the most elaborate among the country's pagoda museums and opened in 1992. It displays sacred relics, images of Shakyamuni Buddha,...

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Read more...



Collaborated Project : **Museum Pool**  
NECTEC Thailand, Lao, UCSY



# Starting the Museum Pool Project in Myanmar, (22<sup>nd</sup> Jan, 2018)





# Preparation of the History of Bagan Pagoda



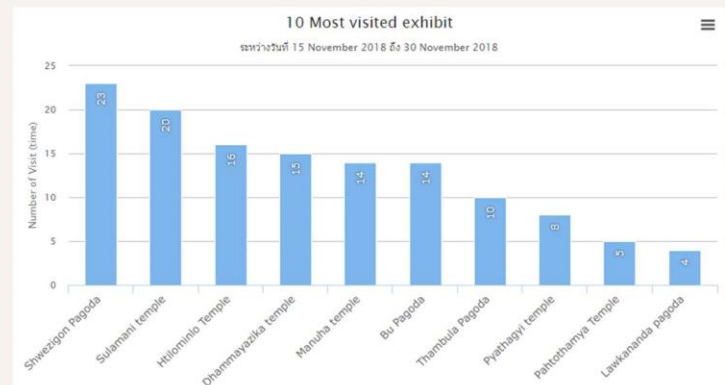




Not secure | [www.museumspool.com/mm\\_bagan/index.php/report/report02](http://www.museumspool.com/mm_bagan/index.php/report/report02)

### Most Visited Exhibit

Duration Start : 15 November 2018 End : 30 November 2018 Report



HEARTBEAT OF THE NATION

# MYANMAR TIMES

## Technology and ancient history come together in Bagan

[Kyaw Ko Ko](#) 23 Nov 2018



One of the ancient pagodas in Bagan. Photo: Shin Moe Myint  
Technology and ancient history come together in Bagan

The Department of Archaeology and National Museums is using technology to try to educate visitors about the history of Myanmar's pagodas and ancient heritage sites. A pilot project started at midyear has installed QR codes at 20 pagodas in Bagan, and has now been extended to 40 more pagodas, officials of the department said.

After downloading an app, visitors to the pagodas merely have to point their smartphone cameras at the codes to receive information, including video and voice recordings, about the pagodas.

"Everything is in place for the project. After approval from the authorities, we can install the codes by the end of the month. Voice recordings and data input for the project have been completed," department officer U Phyo Pyae Ko Ko said.

To carry out the project, the department worked with Yangon Computer University and a technology centre from Thailand, he added.

The QR codes will provide information about restoration work at each pagoda in both English and Myanmar languages, said U Phyo Pyae Ko Ko.

"QR codes were being provided at only one entrance at famous pagodas, so we are now trying to provide the codes at all four entrances of each pagoda," he said.

Smartphone users can download the Museum Pool app from Google Play, which will enable them to scan the QR codes at the pagodas.

### [Bagan Thiripyitsaya Sanctuary Resort - Facebook](#)

<https://www.facebook.com/BaganThiripyitsaya/>

Bagan Thiripyitsaya Sanctuary Resort, Bagan, Mandalay, Burma. ... ဒေသရှိ ရှေးဟောင်းစေတီပုထိုး  
အဆူ ၂၀ တွင် QR Code Scan ဗျာ: ...



# TRAVEL SECTOR UPDATES

## Bagan "Ready" for UNESCO Ground Inspection - The Irrawaddy

<https://www.irrawaddy.com/news/bagan-...> ▾ ဤစာမျက်နှာကို ဘာသာပြန်ပါ

၂၀၁၈ ဩဂုတ်လ - The Day a New Burma was Born ... 7 August 2018 ... Mandalay - The Bagan branch of the Department of Archaeology, National Museum and Library ... Center (NECTEC), is installing QR code boards at 20 pagodas in Bagan. ... about the pagodas displayed as text and audio, in both Burmese and English.



### QR CODE SCANNED AUDIO PRESENTATION ABOUT SOME PAGODAS IN BAGAN AVAILABLE NOW

2018-08-09 07:20:30

Theingi Htun (<http://mymagicalmyanmar.com/postlists-by/28>)

0 Comments



supplied



**Museum Pool Application လေး တော်တော်အဆင်ပြေတယ်**

ပုဂံက လူသိများတဲ့ ဘုရားတွေမှာ QR Code လေးတွေ ထောင်ပေးထားတယ်.. App ထဲနေ Scan ဖတ်လိုက်ရင် ဘုရားသမိုင်း အချက်အလက်တွေ ကျလာရော အင်တာနက်တွေ ဖွင့်ထားရမှာပေါ့နော် ...

NECTEC Thailand နဲ့ ရန်ကင်းပြည်တော် တက္ကသိုလ် UCSY ပေါင်းပြီး ဖန်တီးစဉ်ထားတာ

#Museumpool #Bagan #NECTEC\_Thailand #UCSY



ပုဂံဘုရား အချို့မှာ QR Code Scan များ စမ်းသပ်တပ်ဆင်

ခရီးသွား ချစ်မိတ်ဆွေတို့ အတွက် Please Like and Share

ပုဂံယဉ်ကျေးမ... See more



### QR codes for easy access of information

To provide the information to visitors, the department, with the help of Computer University and Thailand's National Electronic and Computer Technology Center (NECTEC), is installing QR code boards at 20 pagodas in Bagan.

Visitors can easily scan the QR codes on their mobile phones and obtain the history and other information about the pagodas displayed as text and audio, in both Burmese and English.

"Since this is a testing period, the information is not complete yet. But we are trying our best to update the data and we will install the QR code boards at the remaining pagodas and temples very soon," U Aung Aung Kyaw said.

The QR code boards were being installed at 20 well-known pagodas in Bagan, including Sularmani Pagoda, Ananda Pagoda, Bu Phaya, Manuha Pagoda, Thatbyinnyu Pagoda, Gadawpalin Pagoda, Pyatthatgyi Pagoda, Bulaethee Pagoda and Dhammayazika Pagoda.

12go Support English IDR 0

Bangkok ⇄ Chiang Mai

02 Dec 2018 One Way 2 Find tickets

# QR Codes to Help Visitors Learn Bagan's History

News in Asia Nov 23, 2018

Bagan's pilot project which started in the middle of the year with 20 structures and aimed at educating visitors on the history of Bagan's pagodas, proved to be a success and now includes 40 ancient monuments.



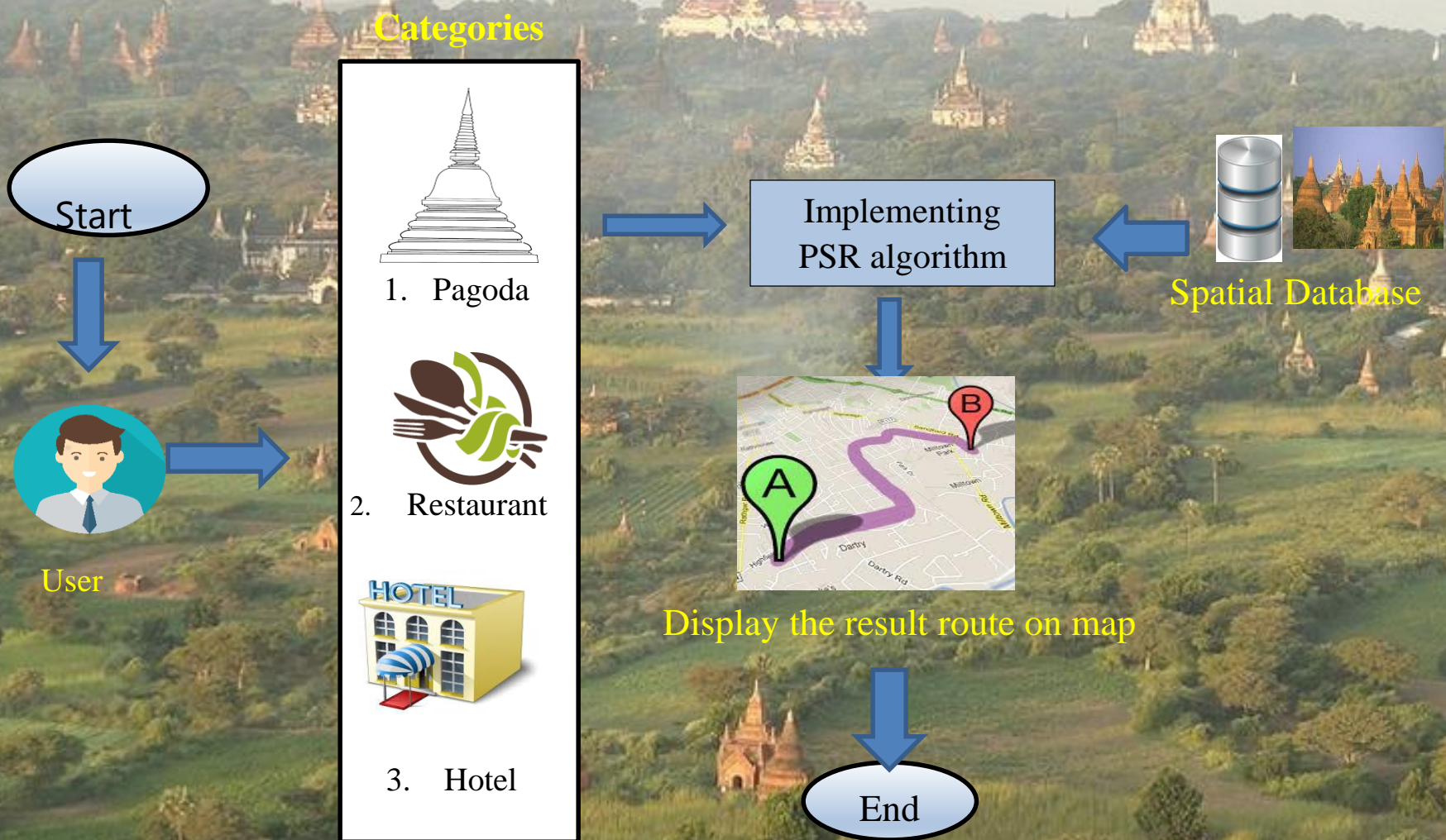
Pagodas chosen for the project now have QR codes which give access to voice and video information on the selected structures. To bring the project to life, the Department of Archaeology and National Museums joined hands with Yangon Computer University and a technology centre from Thailand. Currently, the information is available in Burmese and English languages.

Some of the most prominent pagodas already featuring QR codea are Manuha, Pya That Gyi, Sulamani, Dhammayangyi, Shwegugyi, Bupaya, Ananda, and Narathihapatae Hpaya. Yet there is a bit of a quest to reach the information. QR codes are located at one of the four entrances of each paya, so you will need to find it first. Secondly, currently only Android users can download the app to which the QR codes are linked. The name of the app is the Museum Pool and it can be downloaded for free from Google Play.

Source



# Trip Planning Query for Bagan Using the Partial Sequenced Route Algorithm

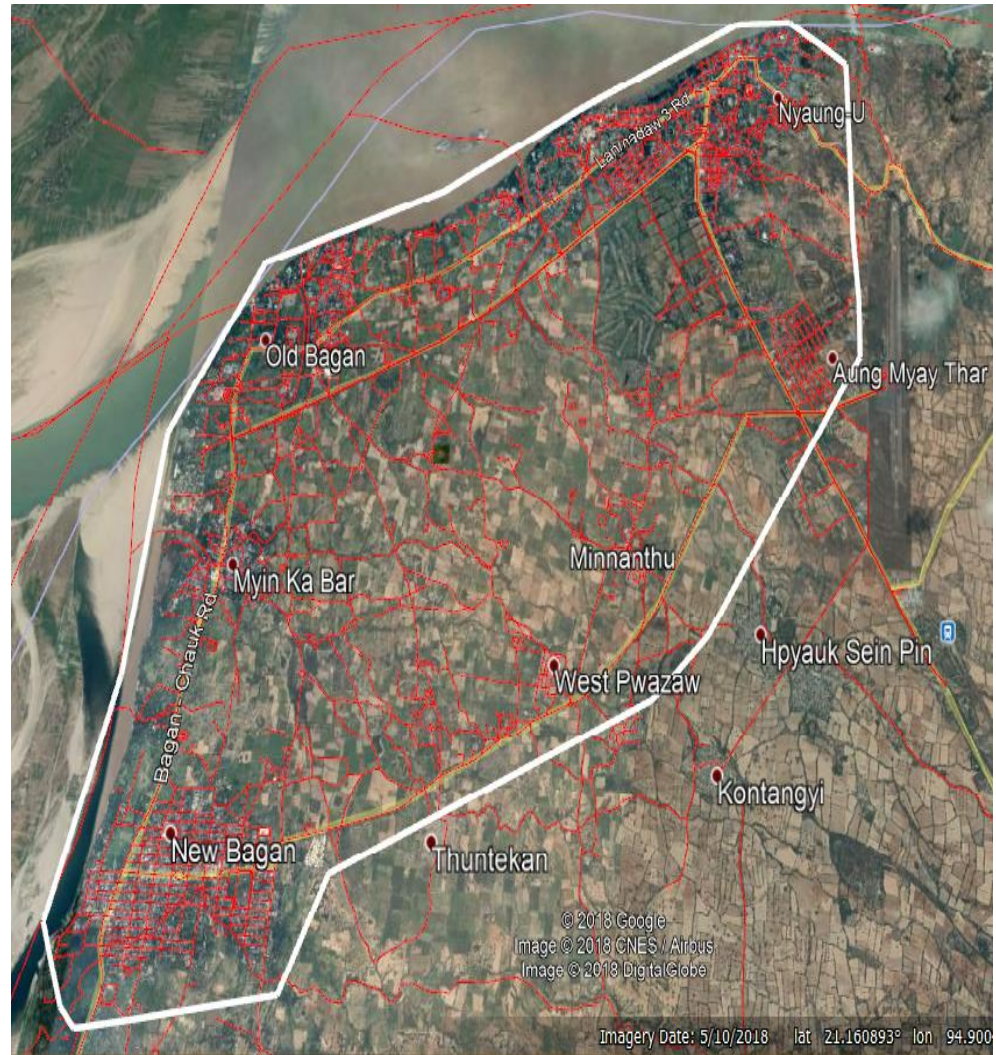




# Area of Bagan Region

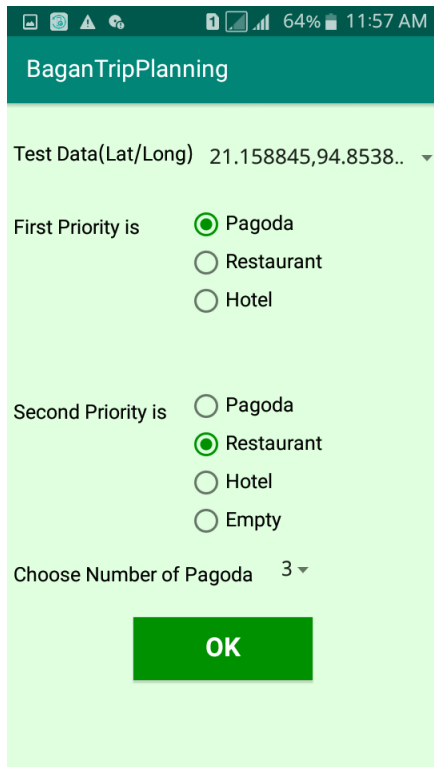
NNPSR Algorithm is implemented with the spatial database of

1. New Bagan
2. Old Bagan
3. Nyaung U
4. Myin Ka Bar
5. West Pwazaw Village
6. Minnanthu Village and
7. Aung Myay Thar  
Quarter

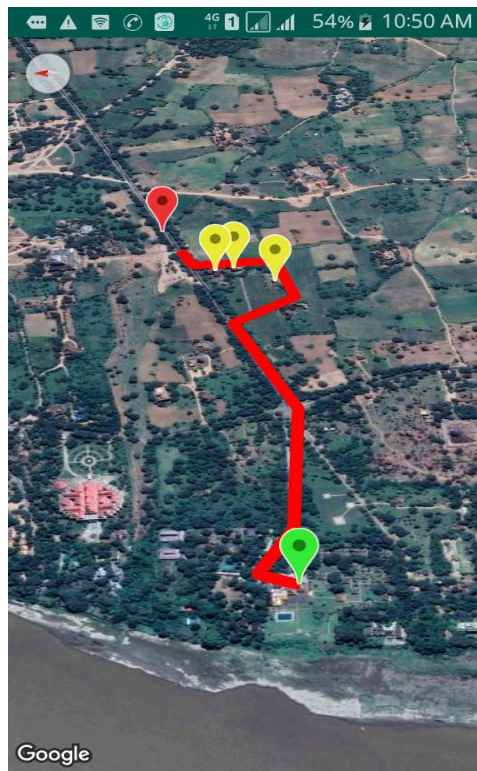


# Route Searching for Trip (Cont'd)

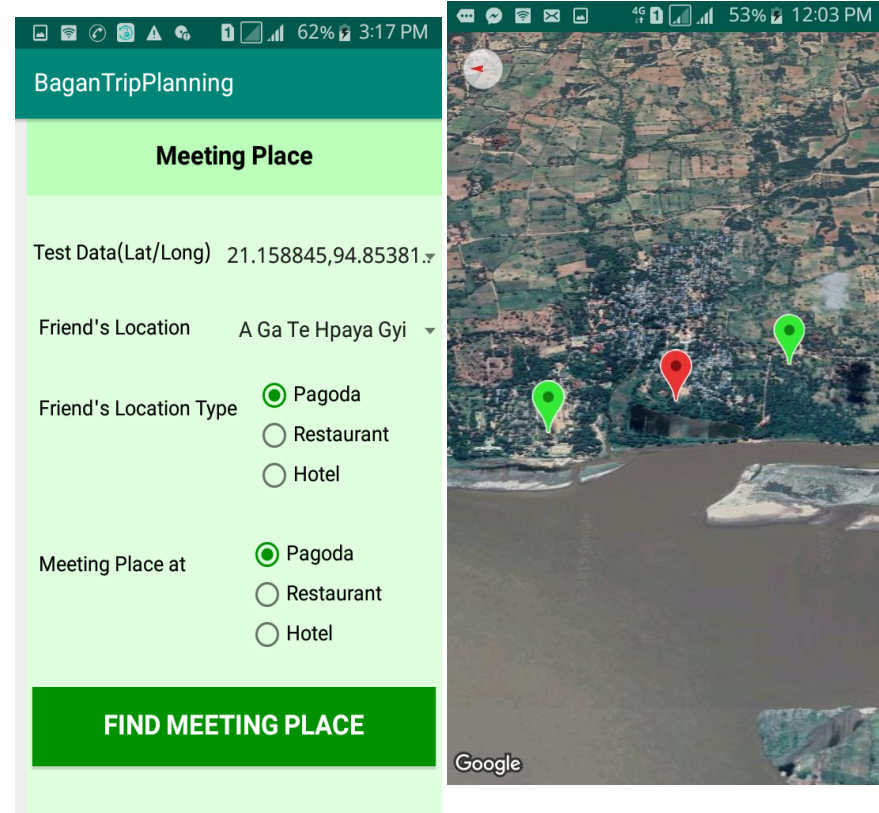
## Meeting Place for Two Users



Selection of 3 pagoda and restaurant



Displaying route of categories on map for the trip



Displaying a meeting place on map



## INTRODUCTION

After the establishment of the AEC (ASEAN Economic Community), travelling has become easier for people living in this region. The main concerns when travelling are safety and well-being. Our 'event analysis' project explores a cost-effective approach that leverages on the recent advances in media streaming technology and AI technology. It is hoped to deliver 'visual event analysis' service to the tourism industries.



### HpVT provides

- low latency, high resolution
- low per unit setup cost
- ease of data accessibility

### AI & Computer vision

- feature learning capability
- improve performance
- ability to learn and adapt
- ability to handle higher complexity

### visual information

- Event analysis
- cloud side computation
  - edge side computation

### Applications

- smart tracking & localization
- smart museum
- smart building
- smart transportation hubs
- smart traffic
- smart pedestrian monitoring
- smart surveillance
- etc.

## Project Members



UTB,



Japan



Singapore,



Thailand



Myanmar



LAOS



Thailand



Malaysia





**THANK YOU**