

# SESSION 7: PLANNING AND IMPLEMENTING A CENSUS GEOSPATIAL PROGRAMME

*Department of Statistics Malaysia*

**REGIONAL WORKSHOP ON THE 2020 WORLD PROGRAMME ON POPULATION AND HOUSING CENSUSES:  
INTERNATIONAL STANDARDS AND CONTEMPORARY TECHNOLOGIES  
12-15 March 2019**



@StatsMalaysia



[www.dosm.gov.my](http://www.dosm.gov.my)

- 1 Introduction
- 2 Geographic Information Systems (GIS)
- 3 Geospatial activities for 2020
- 4 Modernisation
- 5 Way Forward



# MALAYSIA AT A GLANCE



@StatsMalaysia



www.dosm.gov.my

# SUMMARY STATISTICS, MALAYSIA



## Location:

Located between 2 and 7 degrees north of the Equator, Peninsular Malaysia is separated from the states of Sabah and Sarawak by the South China Sea. To the north of Peninsular Malaysia is Thailand while its southern neighbour is Singapore. Sabah and Sarawak are bounded by Indonesia while Sarawak also shares a border with Brunei.

[https://www.statistics.gov.my/index.php?r=column/cone&menu\\_id=ZmVrN2FoYnBvZE05T1AzK0RLcEtiZz09](https://www.statistics.gov.my/index.php?r=column/cone&menu_id=ZmVrN2FoYnBvZE05T1AzK0RLcEtiZz09)

Malaysia	Census 2010	2018
Population (Millions)	28.33	32.36
Male	14.56	16.72
Female	13.77	15.66

Key Summary Statistics, Malaysia	2010
Population Density(per sq. km)	86
Average annual population growth rate, 2000-2010(%)	2.0
Urban population(%)	71.0

# DEPARTMENT OF STATISTICS MALAYSIA (DOSM)



Established in **1949** under the Statistics Ordinance 1949

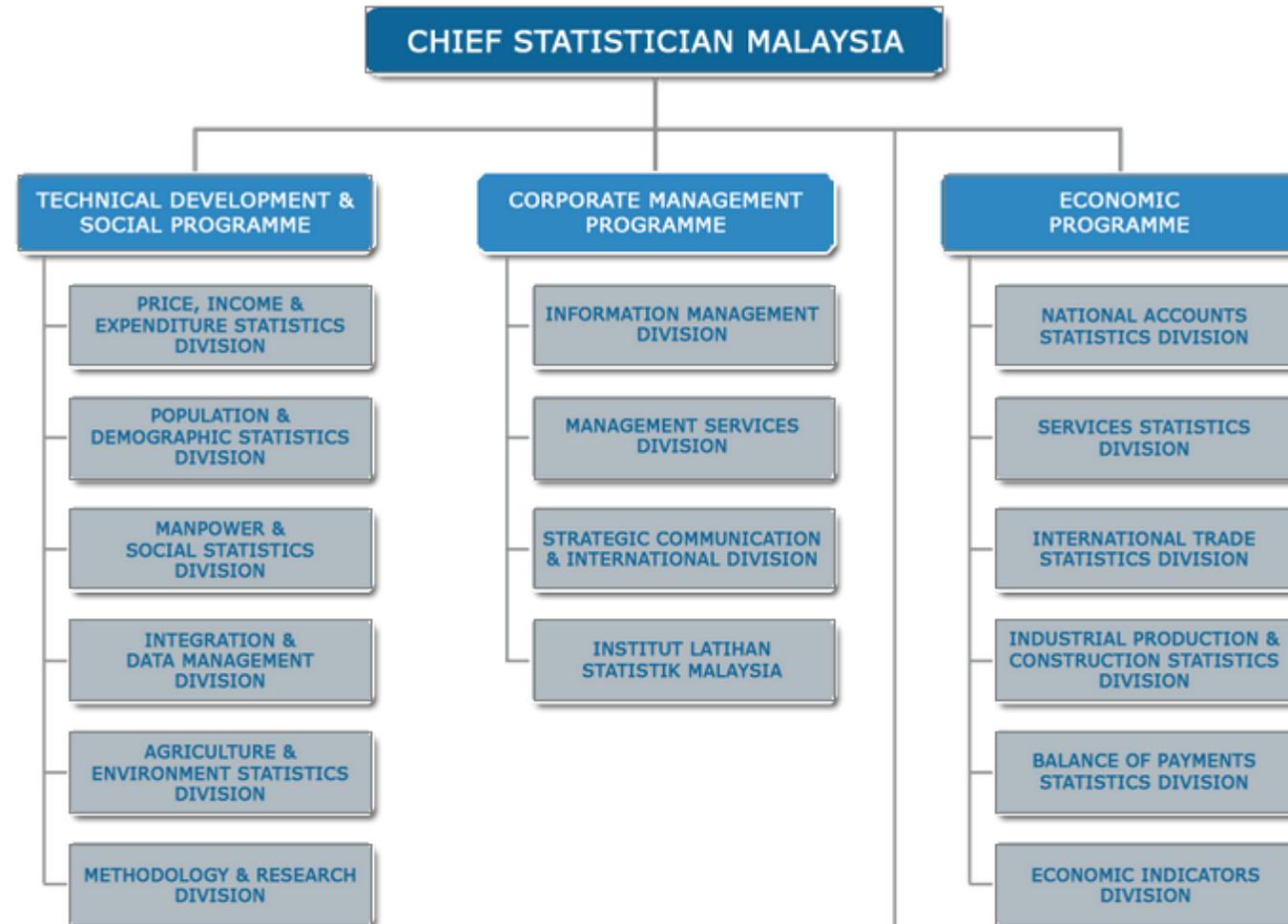
A premier government agency under the Ministry of Economic Affairs entrusted with the responsibility to **collect, interpret and disseminate** latest and real time statistics in the monitoring of national economic performance and social development.

## VISION

To Become A Leading Statistical Organisation Internationally by 2020

## MISSION

Producer of National Statistics of Integrity and Reliability



14 States DOSM 28 Operational Centres





Stakeholders



Ministry / Government Agencies



International  
Users



Public

- ❖ Researcher
- ❖ Universities
- ❖ Embassy
- ❖ Private Sectors

## SOCIAL/DEMOGRAPHY

- ❖ Salaries & Wages Survey Report
- ❖ Current Population Estimates
- ❖ Labour Force Survey Report
- ❖ Household Income & Basic Amenities Survey Report
- ❖ Vital Statistics

## ECONOMIC

- ❖ Quarterly & Annual Gross Domestic Product
- ❖ Consumer Price Index
- ❖ Monthly External Trade Statistics
- ❖ Index of Industrial Production, Malaysia
- ❖ Domestic Tourism Survey
- ❖ Balance of Payment

- ❖ Statistics on Women Empowerment In Selected Domains, Malaysia
- ❖ Labour Productivity
- ❖ Social Accounting Matrix
- ❖ Children Statistics, Malaysia



# NATIONAL ENGAGEMENT



**DOSM SAS Certified Data Scientist**  
Tuesday, 16 January 2018



**Courtesy visit by Monash University Malaysia**  
Wednesday 03, January 2018



**Courtesy Visit by Mr. James Lochhead, Consultant for Gender Mainstreaming Project**  
Wednesday, 10 January 2018



**STASBDA Development Review**  
Tuesday, 16 January 2018



**Courtesy Visit by Vice Chancellor UNITEN**  
Thursday 04, January 2018



## 6<sup>th</sup> CENSUS 2020

The Population and Housing Census in Malaysia is conducted every 10 years. Since the establishment of Malaysia, 5 census has been implemented.



## MAIN OBJECTIVE

To have a total coverage and to accurately count and measure the numbers and key characteristics of the population, households and living quarters in Malaysia at a point in time



## LEGAL BASIS

- Census Act 1960 (Revised 1969).
- Statistics Act 1965 (Revised 1989).



## RESOLUTION

*Resolution on 2020 World Population and Housing Census Programme adopted by the ECOSOC (10 June 2015) to ensure the member states to conduct a census during 2015–2024 period.*



## MANUAL

*Principles and Recommendations for Population and Housing Censuses, Revision 3, UNSD (2015).*



- UN *Principles and Recommendations for Population and Housing Censuses*, , **recommended the use of Geospatial technologies for improving traditional methods of census mapping** (adopted by UNSC in 2007).
- Other recommendations derived from UN EGM on GIS and Census Mapping emphasized:
  - the need for countries to consider the **census geography programme as a continuous process**
  - the use of and application of geospatial technologies and information is **beneficial at all stages of population and housing census process** (GI improves the efficiency in the preparatory, enumeration, processing and dissemination phases of the census)

**Linking geospatial information to statistics through geocoding.**  
[2<sup>nd</sup> Session of UN-GGIM, August 2012]

**Stronger interoperability and integration, between geospatial and statistical authorities.**  
[Future trends in geospatial information management: the five to ten year vision, July 2013]

International standard for linking socio-economic information to location— an **international statistical geospatial framework.**  
[UNSC Programme Review, February 2013]



# Main Objectives Of Census

01

To compile the total coverage and profile of the population, households and living quarters in Malaysia with a wide range of demographic and socio-economic characteristics **to the smallest area**

02

To provide input for planning, formulation and implementation of government policies and development programmes as stated in the Legislation

03

To provide a reliable basis for the estimation and projection of the population and living quarters

04

To provide input for the development of new socio-economic key indicators

# Perimeter for census

## LIVING QUARTERS



OCCUPANCY



CONNECTIVITY



UTILITIES



LOCAL AREA



TYPES OF LIVING QUARTERS

## POPULATION



AGE



SEX



ETHNICITY



MIGRATION



MARITAL STATUS



RELIGION



EDUCATION



CITIZENSHIP



ECONOMICS

## HOUSEHOLD



TYPE OF HOUSEHOLD



AGRICULTURE ACTIVITIES



OWNERSHIP STATUS



# GIS TECHNOLOGY MALAYSIA'S EXPERIENCE AND PRACTICE



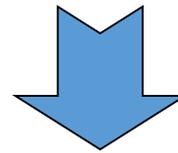
@StatsMalaysia



www.dosm.gov.my

**1989-1991**

**Preparatory Stage**



**After 1991 Census**

**Create a census cartographic database**

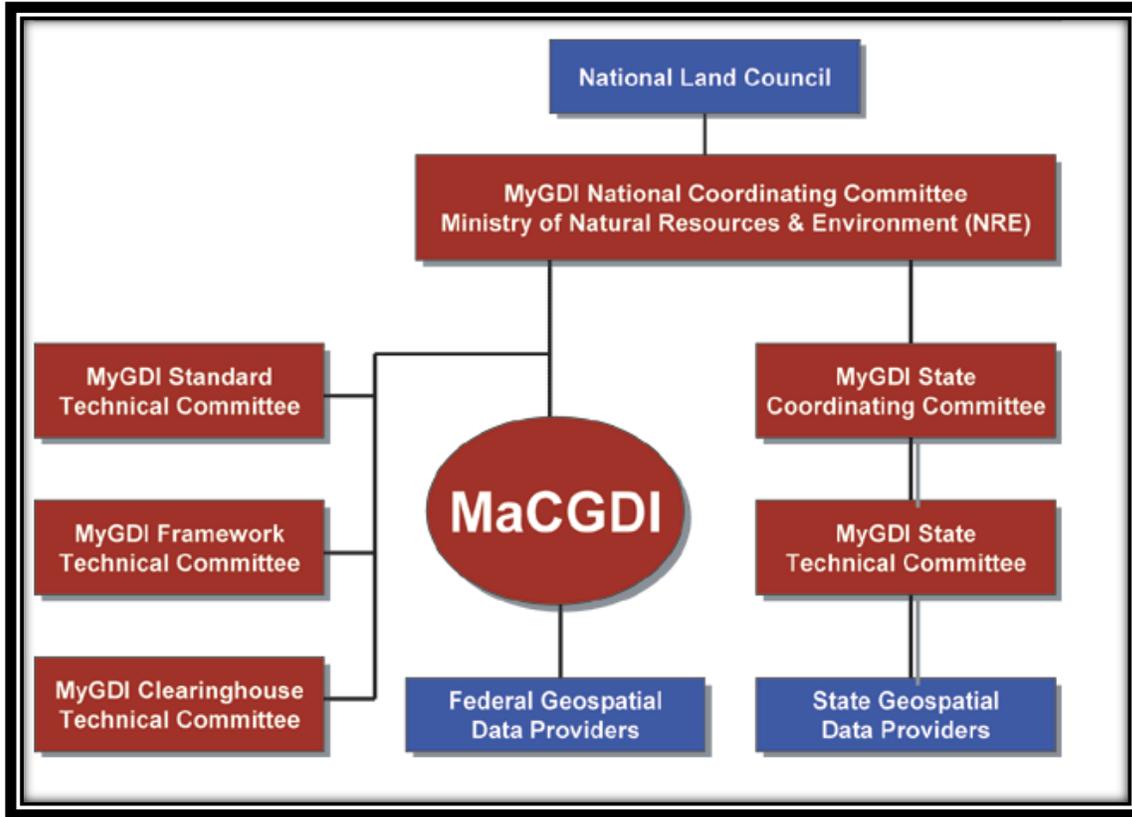
**Malaysian Centre for Geospatial Data Infrastructure (MaCGDI)** is a centre established by the government to manage and promote the development of geospatial data infrastructure for Malaysia (MyGDI). MaCGDI is also responsible for coordinating access and delivery of the geospatial information held by all government agencies.

The main role of MaCGDI is to continuously make available and accessible current and accurate geospatial data that promotes a sustainable living environment, economic growth and social progress for public.

### **Objectives:**

- To provide mechanism/infrastructure in supporting the usage and sharing of current, accurate and reliable geospatial information among agencies by employing the latest geospatial technologies; and
- To avoid redundancy of duplicating effort in collecting, processing, maintaining, providing and dissemination of required geospatial information.

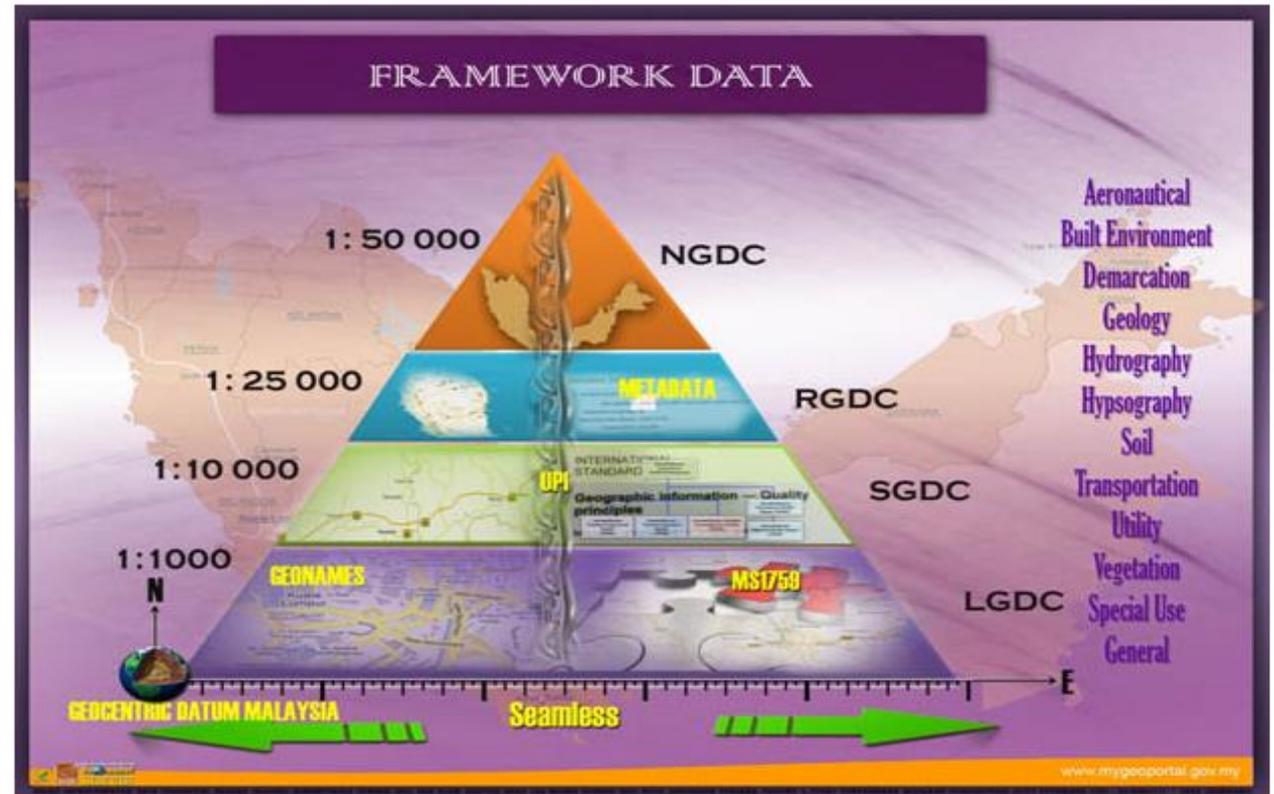
<http://macgdi.mygeoportal.gov.my/167.aspx>



**Framework Data** refer to the coordinating data sharing within government agencies by establish fundamental dataset of National Geospatial Data Centre (NGDC) and State Geospatial Data Centre (SGDC). The objective is to prevent duplication of effort in data collection within government agencies.

## MyGDI Governance

To manage the development and operation of MyGDI, a [MyGDI National Coordinating Committee](#) (MNCC) was formed with the role of a central policy and decision making body on matters pertaining to the implementation, development and operations of MyGDI programmes and MaCGDI as the coordinator





## CENSUS MAPPING & DIGITAL MAPS

2000 - 2007

### Dissemination Data

Statistical  
boundaries

2007 - 2009

### Development

- Statistical boundaries
- Vector data (topographic digital map)

2011 - 2012

### Census Geodatabase

Integrating  
census with  
Statistical  
boundaries

2010

### National Enterprise wide Statistical System (NEWSS)

Internal GIS  
Portal

2015

### StatsDW

- Location intelligent
- Integration BI and GIS

2017 - 2020

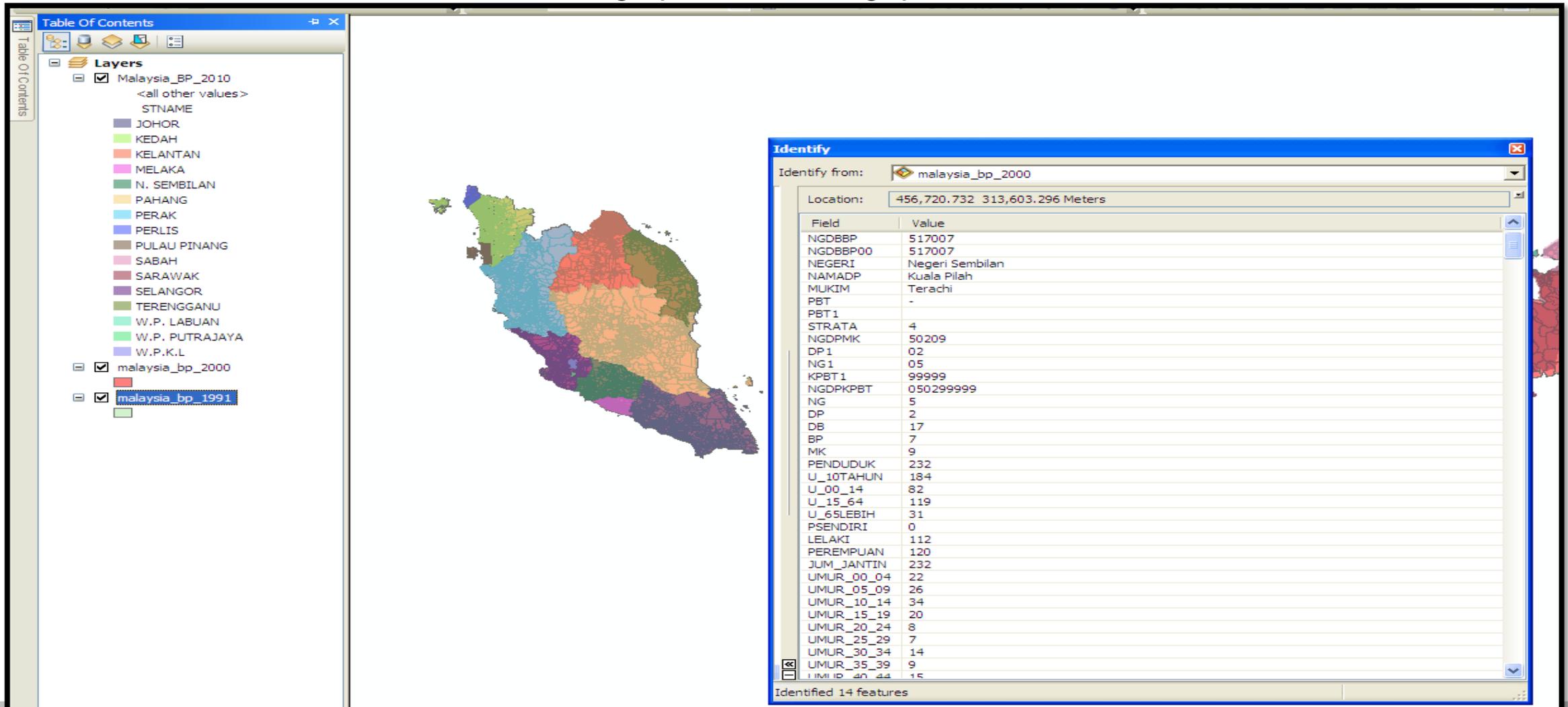
### MyIPCS

- Smart Listing and Smart Map
- Integration Data and Map

- **Delineation and digitizing of Enumeration Block (EB) boundaries for 2020 Census by using base maps from OGA.**
- **Establish the centralised geodatabase and internal GIS Portal for updating maps by State Office.**
- **Generating census data at small area statistics or specific area for the users.**
- **Producing thematic maps from various sources especially on Census and other data.**



- Census geospatial database at difference levels of geography. Small area statistics from census data which consist of demographic data, living quarters, household, and others.

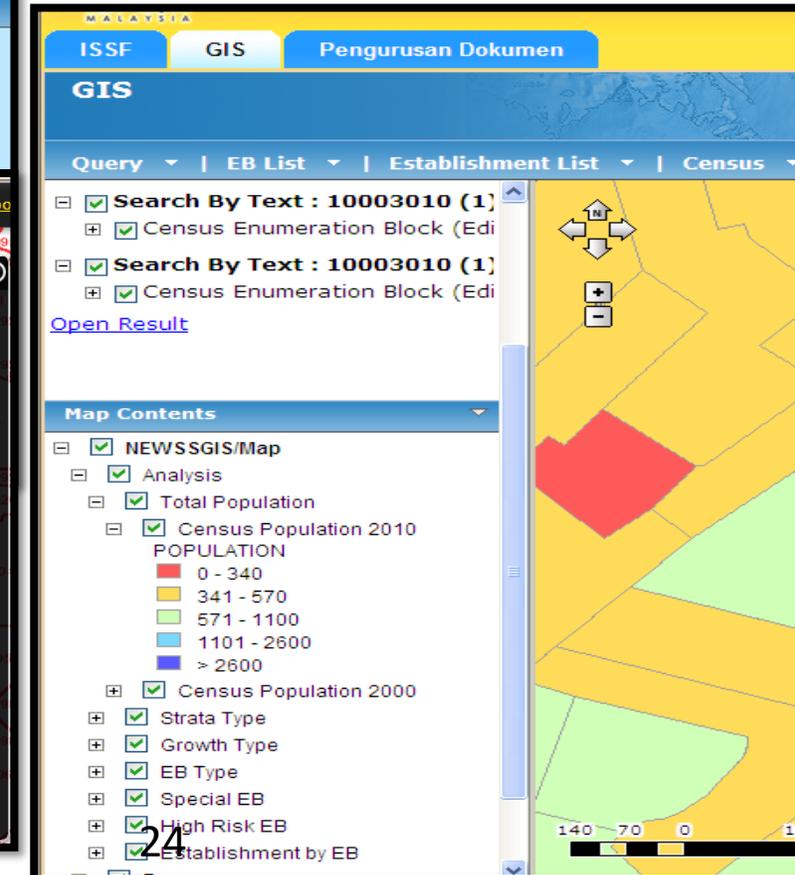
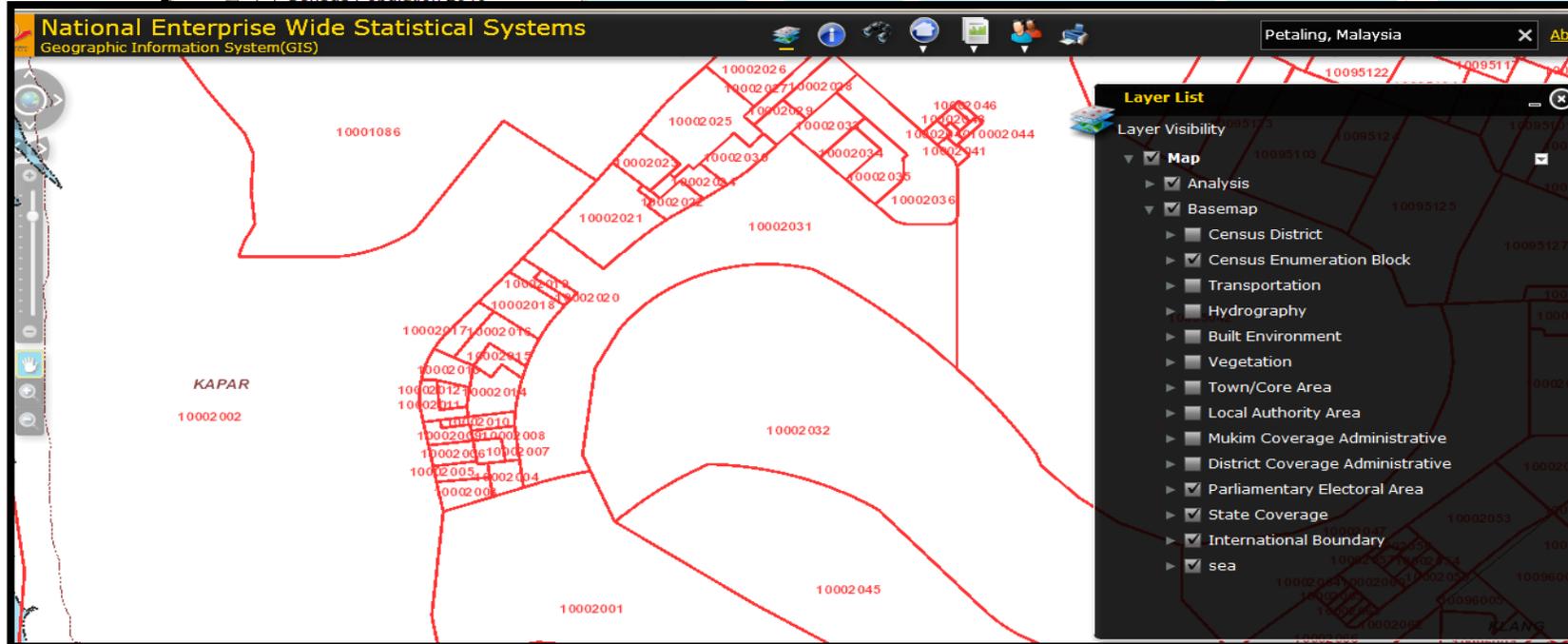
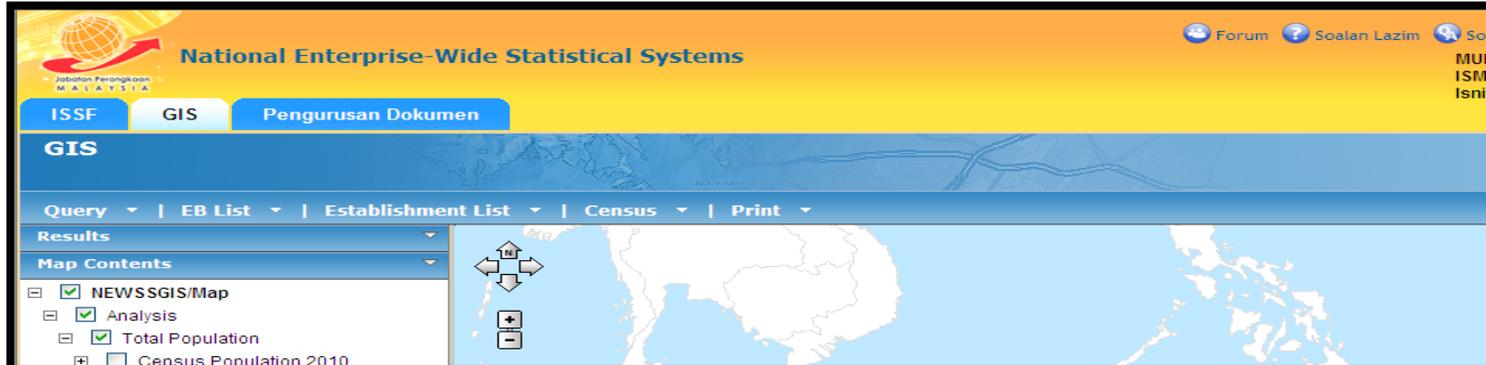


The screenshot displays a GIS application interface. On the left, the 'Table Of Contents' panel shows a list of layers, including 'Malaysia\_BP\_2010' (with a legend for states like JOHOR, KEDAH, etc.) and 'malaysia\_bp\_1991'. The main map area shows a geographical map of Malaysia with various colored regions. On the right, the 'Identify' window is open, showing the 'malaysia\_bp\_2000' layer selected. The location is specified as 456,720.732 313,603.296 Meters. Below this, a table lists various fields and their corresponding values for the identified location.

Field	Value
NGDBBP	517007
NGDBBP00	517007
NEGERI	Negeri Sembilan
NAMADP	Kuala Pilah
MUKIM	Terachi
PBT	-
PBT1	-
STRATA	4
NGDPMK	50209
DP1	02
NG1	05
KPBT1	99999
NGDPKPBT	050299999
NG	5
DP	2
DB	17
BP	7
MK	9
PENDUDUK	232
U_10TAHUN	184
U_00_14	82
U_15_64	119
U_65LEBIH	31
PSENDIRI	0
LELAKI	112
PEREMPUAN	120
JUM_JANTIN	232
UMUR_00_04	22
UMUR_05_09	26
UMUR_10_14	34
UMUR_15_19	20
UMUR_20_24	8
UMUR_25_29	7
UMUR_30_34	14
UMUR_35_39	9
UMUR_40_44	15

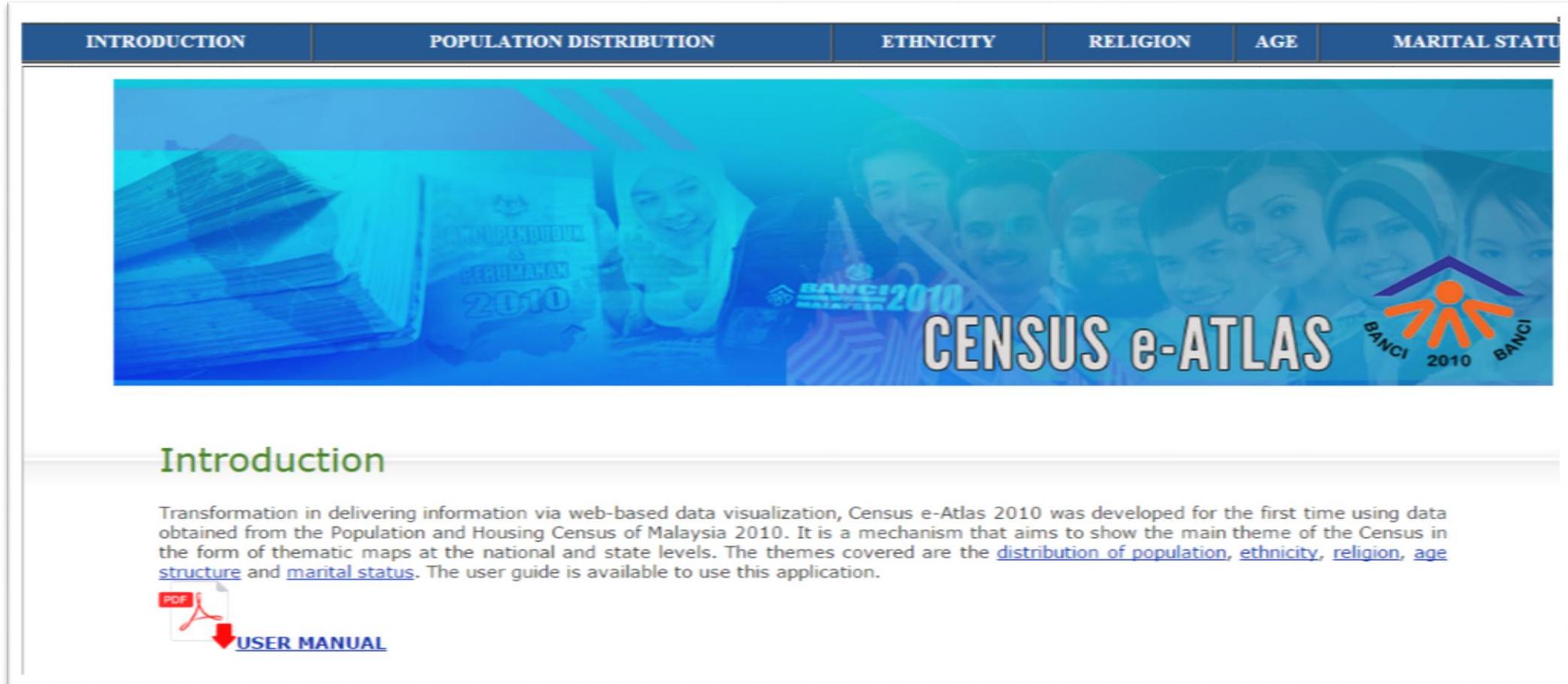
# PRODUCTS

- GIS internal portal; developed under National Enterprise Wide Statistical System (NEWSS).



# PRODUCTS

- Census e-Atlas developed using ArcGis Online **platform- Changed to Stats Geo Portal**
- It shows thematic maps of selected census data.



INTRODUCTION      POPULATION DISTRIBUTION      ETHNICITY      RELIGION      AGE      MARITAL STATUS

**CENSUS e-ATLAS**

## Introduction

Transformation in delivering information via web-based data visualization, Census e-Atlas 2010 was developed for the first time using data obtained from the Population and Housing Census of Malaysia 2010. It is a mechanism that aims to show the main theme of the Census in the form of thematic maps at the national and state levels. The themes covered are the [distribution of population](#), [ethnicity](#), [religion](#), [age structure](#) and [marital status](#). The user guide is available to use this application.

 [USER MANUAL](#)



## LATEST RELEASES



**28 Feb 2019**

Annual Economic Statistics 2018: Mining of Petroleum and Natural Gas

**28 Feb 2019**

Annual Economic Statistics 2018 Water Supply; Sewerage, Waste Management & Remediation Activities

## COMING SOON

Advance Release Calendar

- **07 Mar 2019**  
Annual Economic Statistics - Manufacturing
- **07 Mar 2019**  
Annual Economic Statistics - Construction



Highlight

Online Services

Procurement

Statistics

Application

Survey

DOSM Community



- eStatistik
- Population Quick Info
- Malaysia External Trade Statistics Online (METS Online)
- Malaysia Informative Data Centre (MysIDC)
- MalaysialInfo
- MyLocal Stats
- **STATS Geoportal**  
(No. of Transactions for Online Services)

## ANNOUNCEMENT



Latest DOSM's Newsletter 2018»

## LATEST EVENTS



**Asian Development Outlook 2019 Consultation Mission** »  
Monday 18, February 2019

**62nd ISI WORLD STATISTICS CONGRESS 2019**  
18 - 23 August 2019, Kuala Lumpur

Early Bird Registration : 1<sup>st</sup> December 2018 - 31<sup>st</sup> May 2019

**GDP** **Services** **Unemployment** **Population** **Export** **Import** **CPI** **PPI** **FDI** **IPI**

**STATISTICS DATA WAREHOUSE**

**STATISTICS INSPIRE INNOVATIVE MIND**

**CLIENT'S CHARTER ACHIEVEMENT**

**GALLERY**



Department of Statistics  
MALAYSIA

# Welcome to Stats Geoportal



Malaysia @ a Glance



Population



Social & Economy



Time Series



Small Area Population



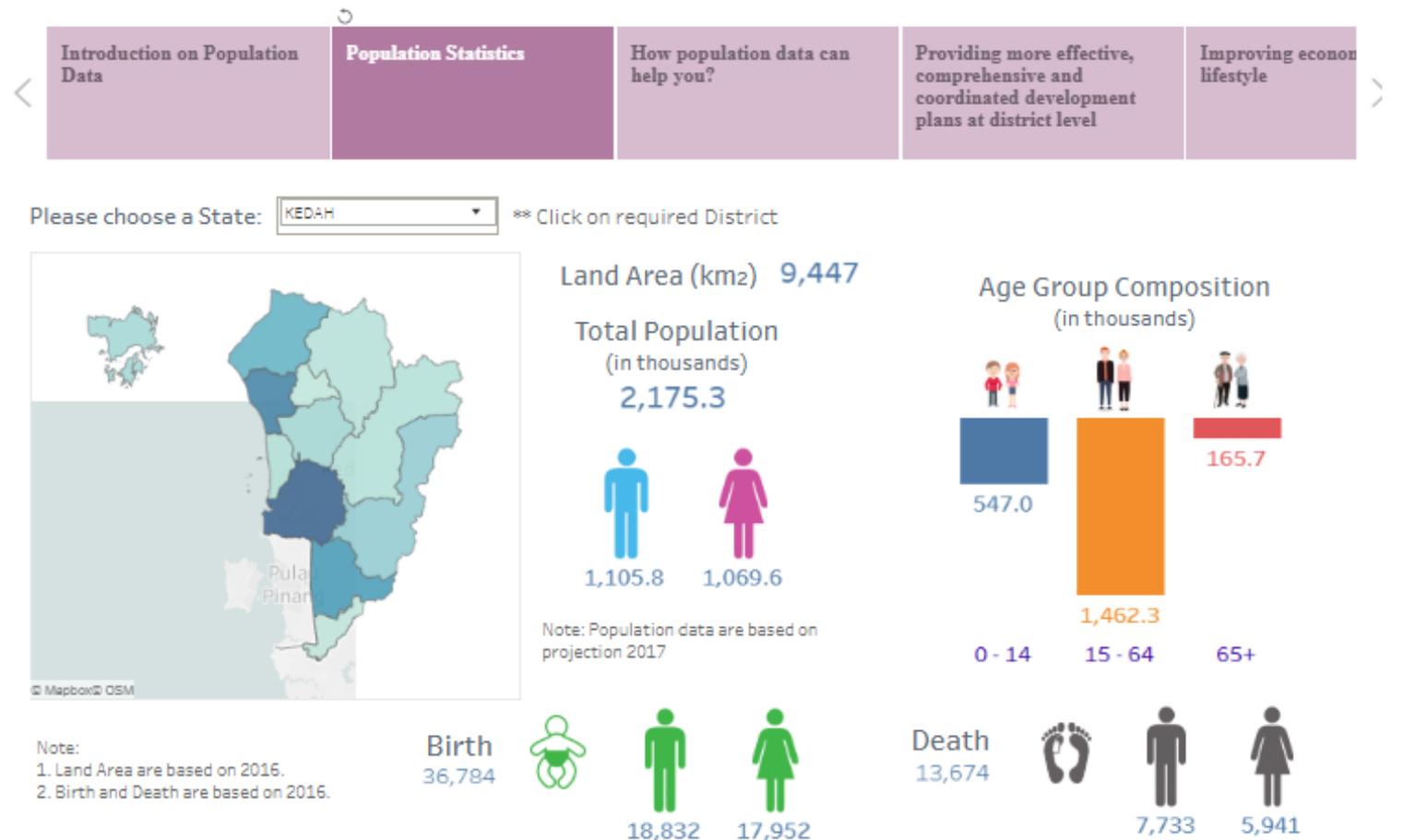
Report

STATS GEOPORTAL is a gateway to web-based geostatistics information that allows users to search, access, display and view information by population / demographic, social and economic data at various geographical levels.

- Data visualisation at [www.dosm.gov.my](http://www.dosm.gov.my). Data visualisation tools allow anyone to organize and present information intuitively.

## Population Statistics

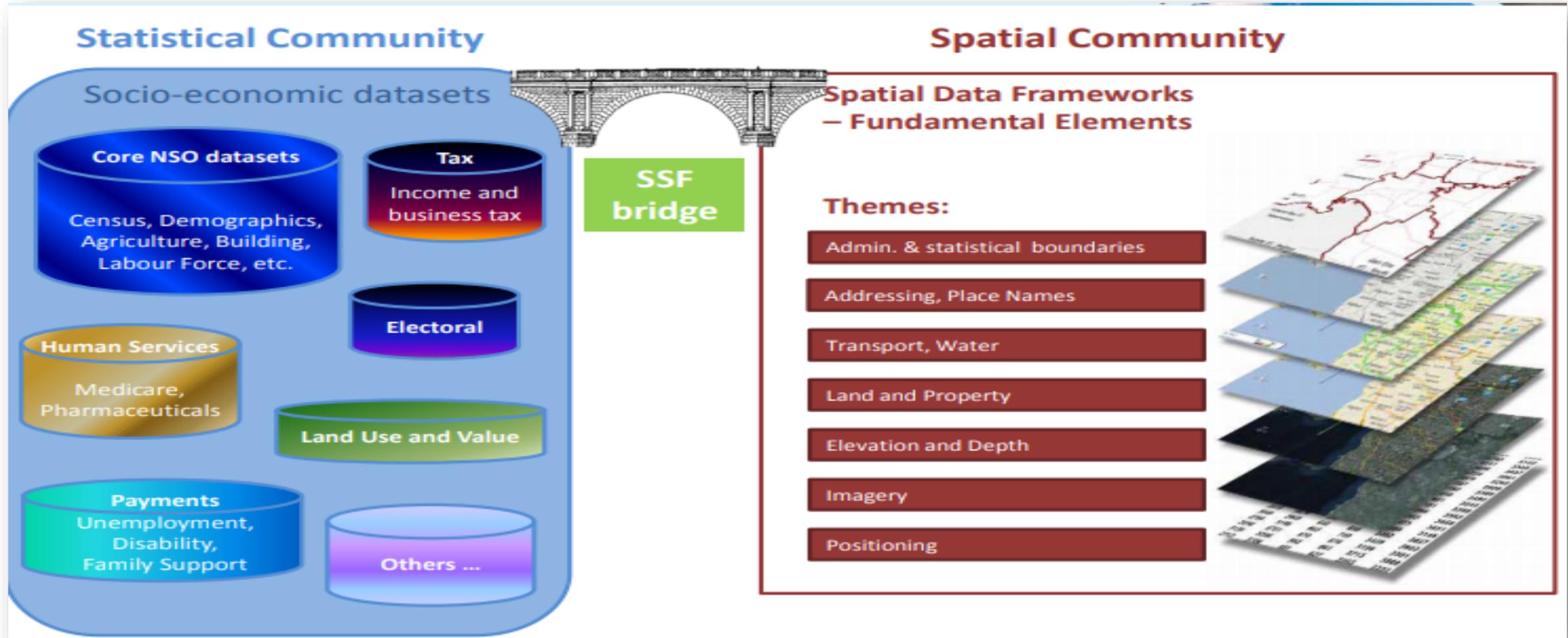
Home » Statistics » Online Services » Interactive Visualisation » MyLocal Stats » Population Statistics



- ✓ **Lack of expertise and technical capabilities to enhance the use and development of GIS with the most updated technology.**
- ✓ **Need investment to purchase the most updated base maps/software especially on raster data.**
- ✓ **Integrating the variety of spatial data from OGA in order to create updated statistical maps.**

- ✓ **Extending the scope of census cartography to the national spatial framework.**
- ✓ **Providing the most efficient platform for data dissemination through GIS Portal.**
- ✓ **Merging of household and establishment frames into the GIS environment.**
- ✓ **Constructing the EB geo database by using technical advances, such as Remote Sensing data, GPS.**
- ✓ **Strengthening the collaboration with OGA/GLC for map integration, standard and quality assurance.**

# Integration statistics and spatial



Sources :

[http://ggim.un.org/meetings/2014-IGSI\\_Beijing/](http://ggim.un.org/meetings/2014-IGSI_Beijing/)

International Workshop on Integrating Geospatial and Statistical Information, Beijing, China, 2014



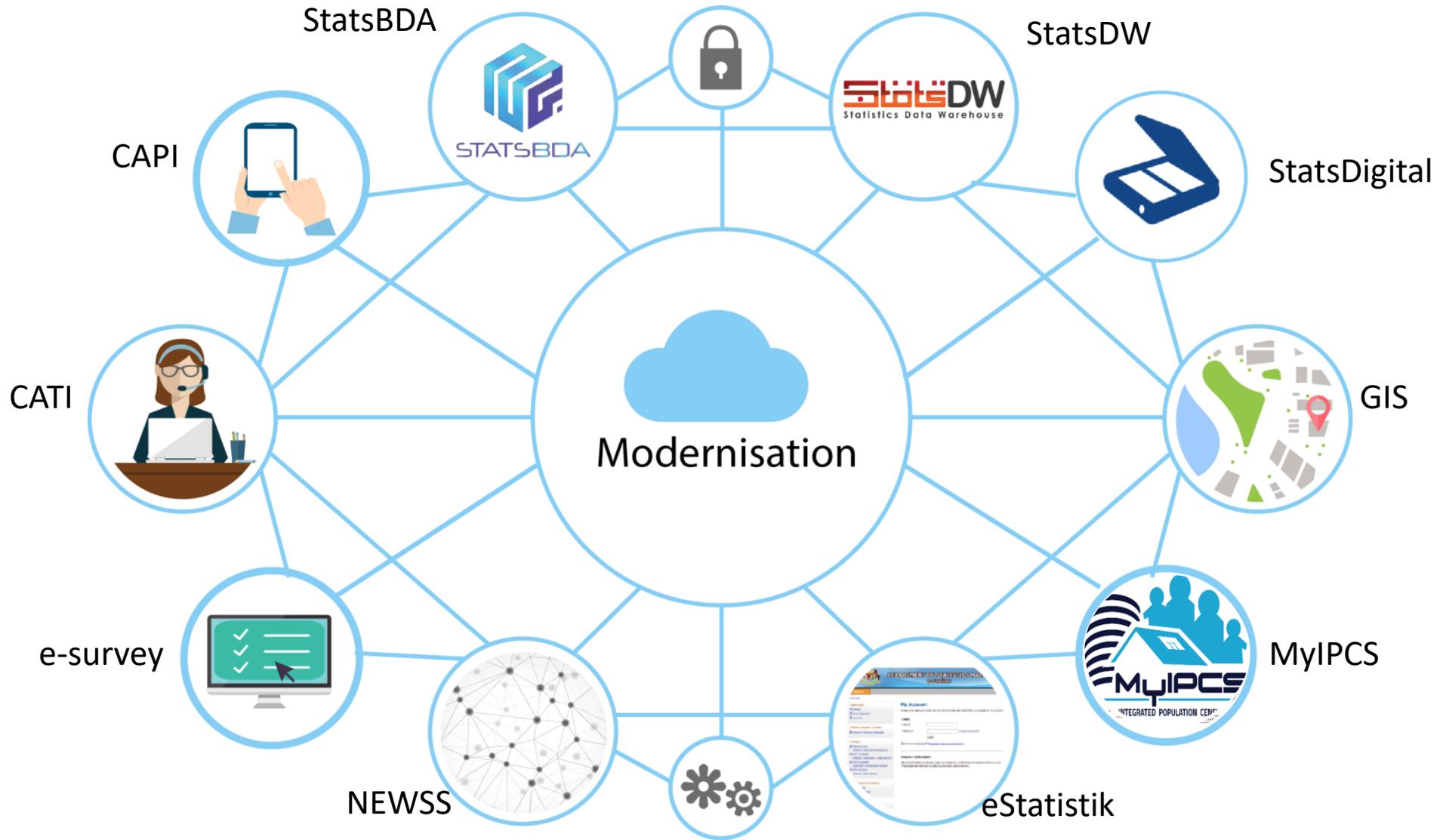
# MODERNISATION

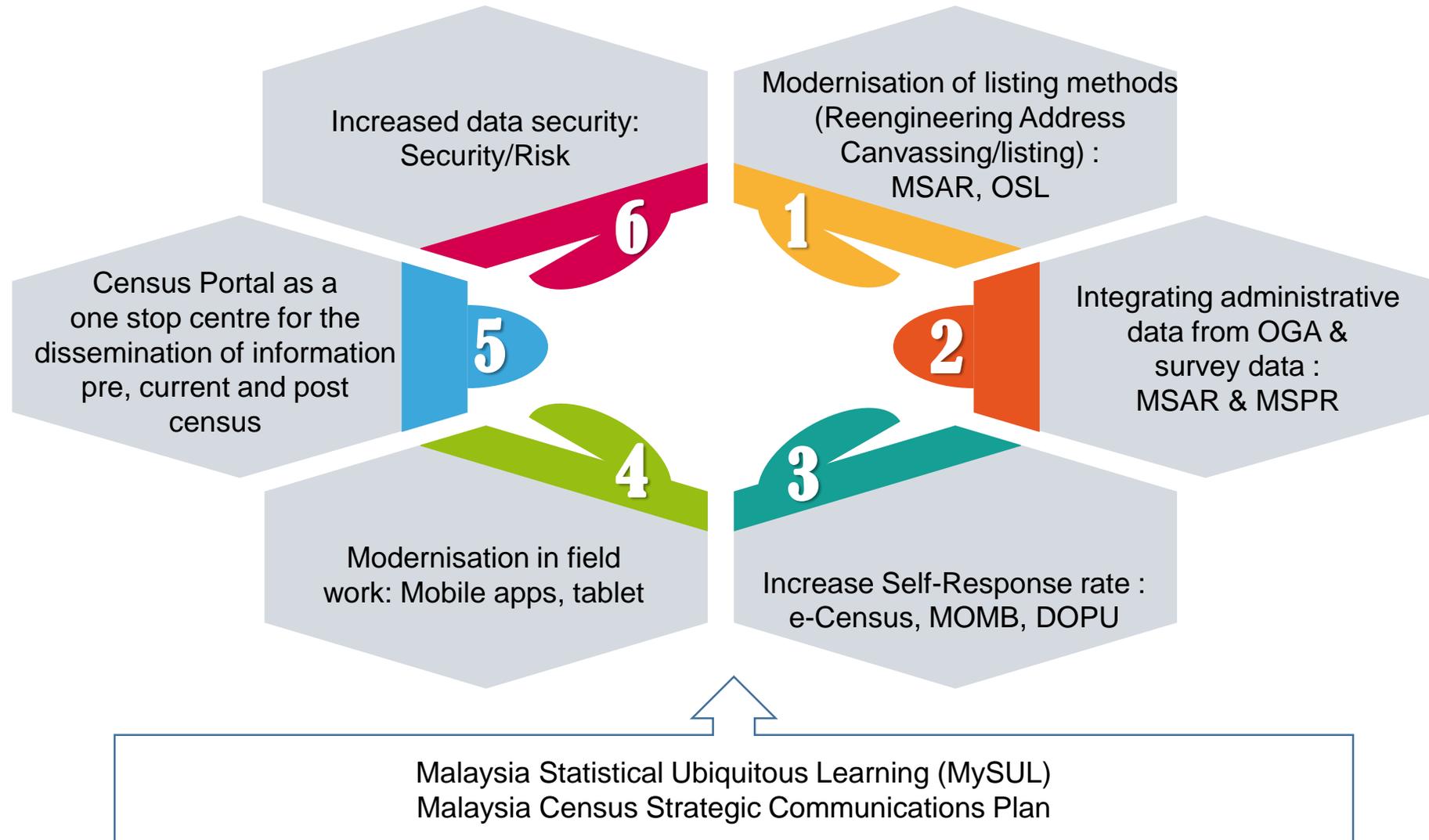


@StatsMalaysia

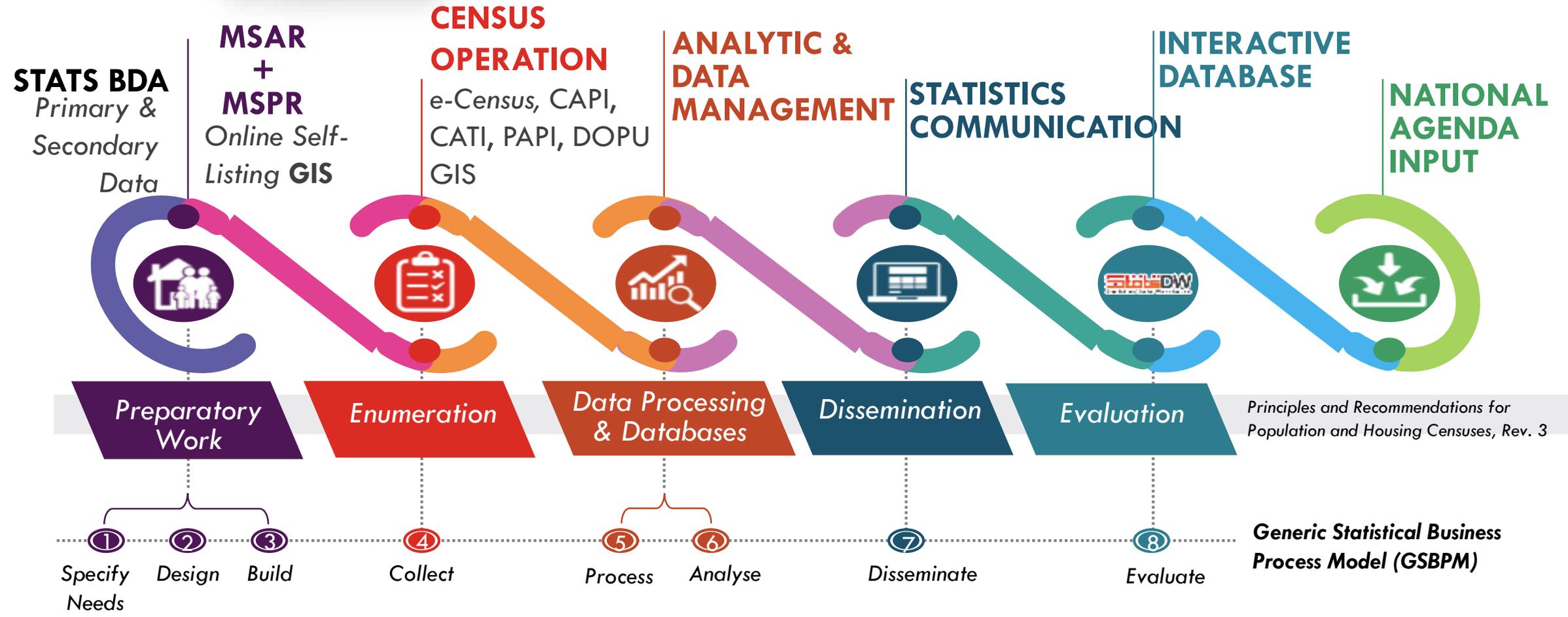


www.dosm.gov.my





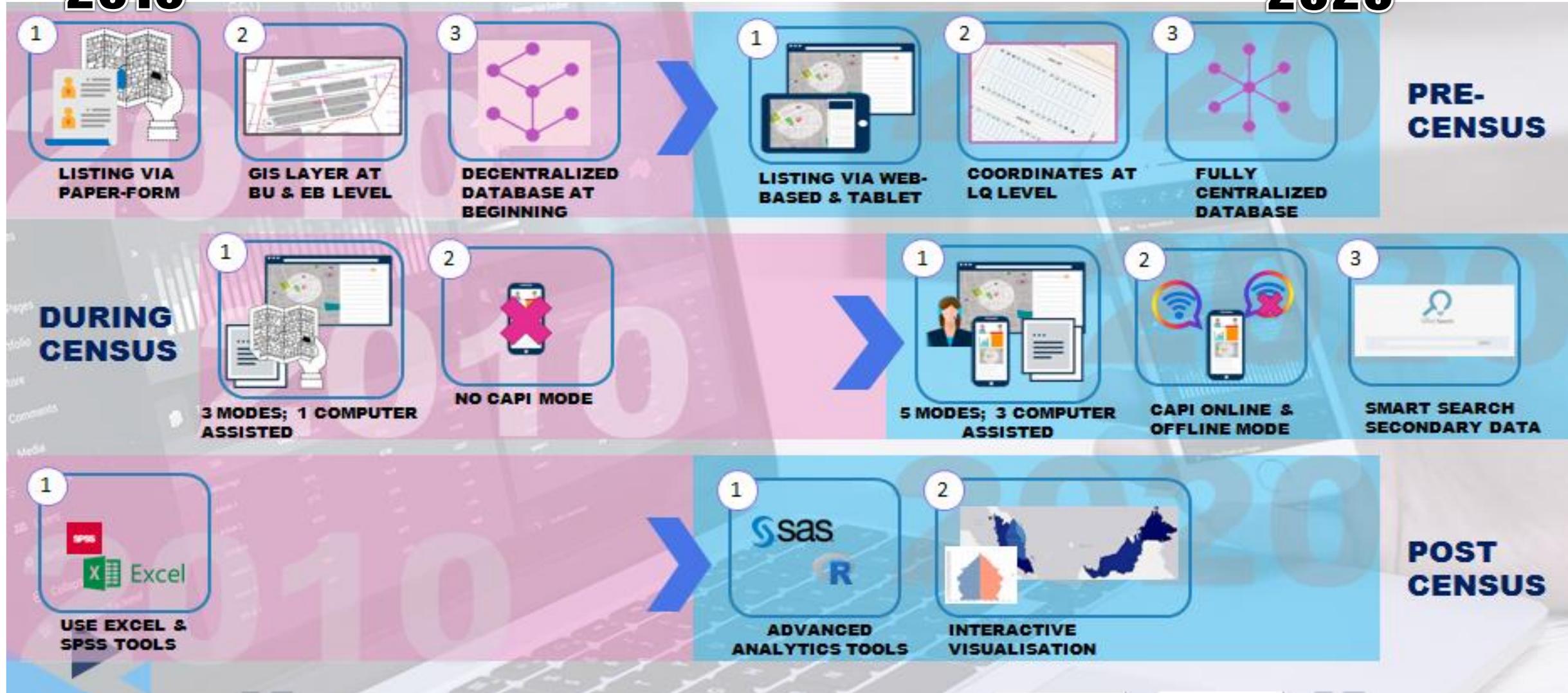
# Overview MyIPCS



# Modernisation Of Census 2020 – Key aspects

## 2010

## 2020



# GEOSPATIAL ACTIVITIES FOR 2020



@StatsMalaysia



www.dosm.gov.my

# Geospatial activities



2017-2019

## PRE-ENUMERATION

- Create and update statistical map
- Address geocode



2020

## ENUMERATION

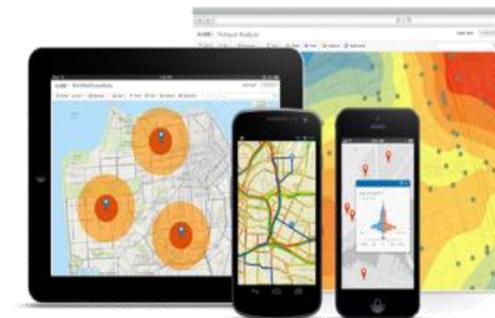
- Census tracking and progress monitoring during operation



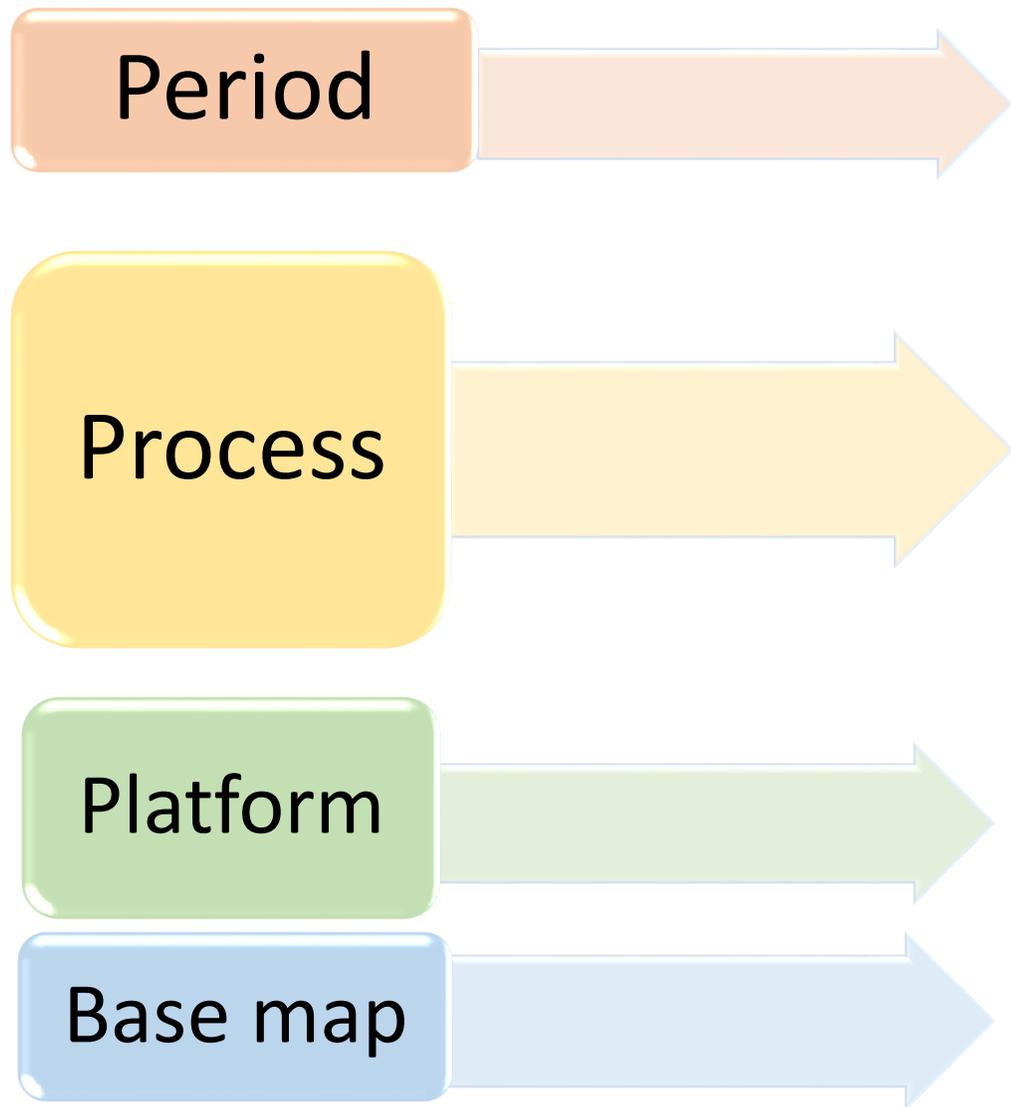
2021-2022

## POST ENUMERATION

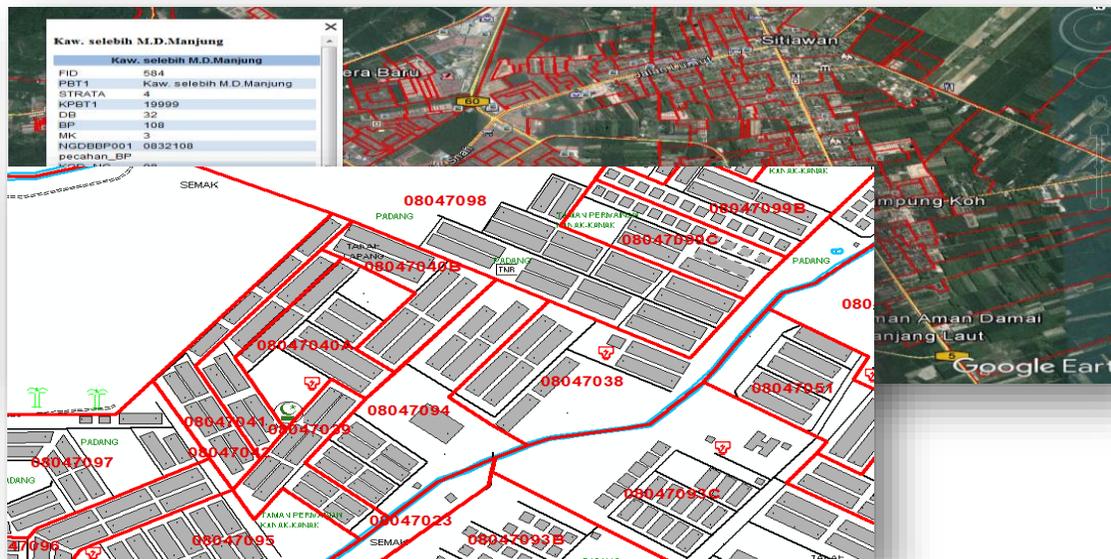
- Dissemination via Web based and spatial analysis



# Pre-enumeration



2017-2019

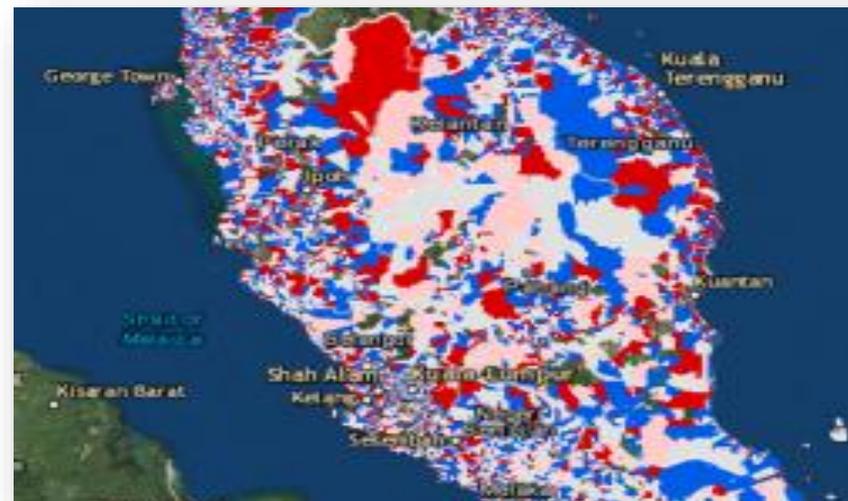
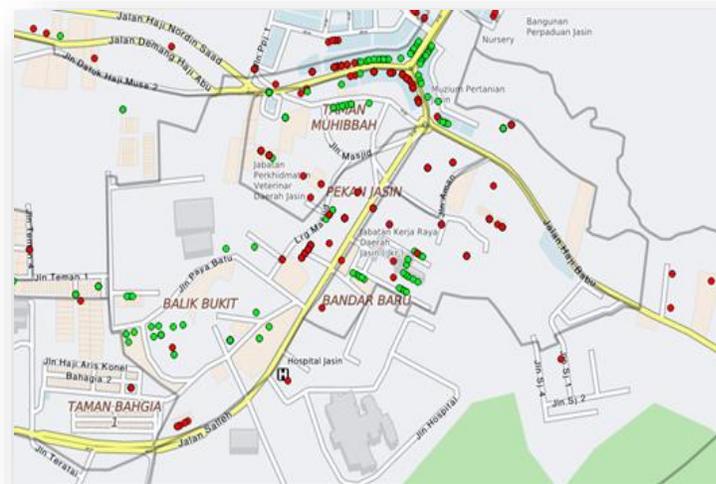


**PLANMalaysia**  
(Jabatan Perancangan Bandar dan Desa)



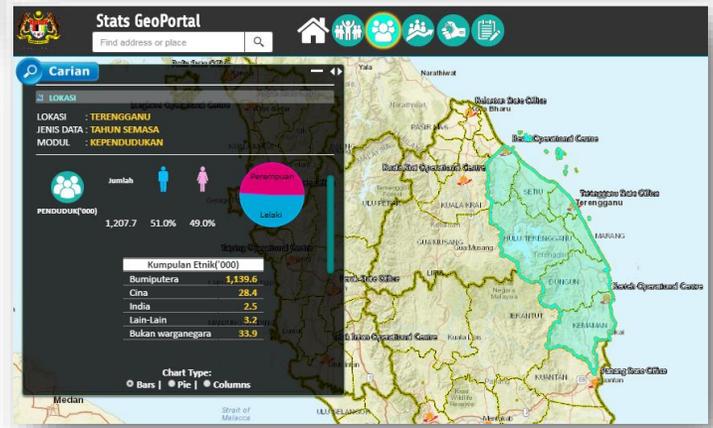
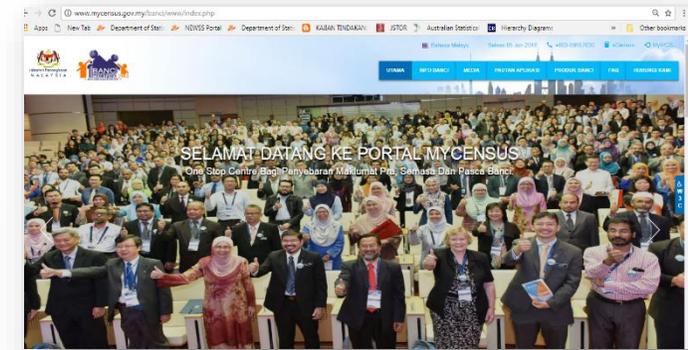
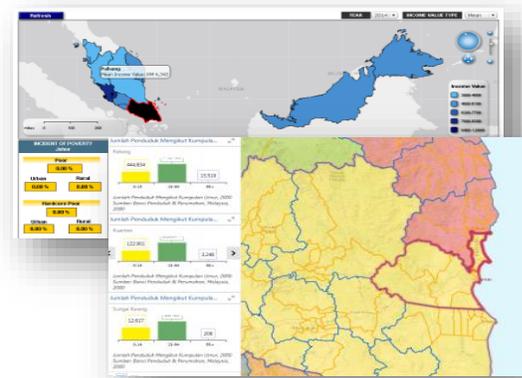
# During enumeration

- Preliminary report
- Progress monitoring
- Census tracking



# Post enumeration

- Preliminary report
- Progress monitoring
- Census tracking



# MOVING FOWARD



@StatsMalaysia



www.dosm.gov.my

- Expand the integration of statistical and geospatial
- Strategic partnership with other agencies for the use of high resolution of spatial data
- Advanced the use of spatial analysis & tools for official statistics
- Extend the use of web based platform for dissemination of geo statistics



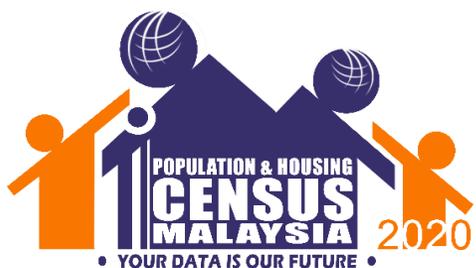
# Welcoming 62<sup>nd</sup> ISI WORLD STATISTICS CONGRESS 2019



18 - 23 AUGUST 2019 | KUALA LUMPUR



# THANK YOU



TOWARDS  
POPULATION & HOUSING  
CENSUS MALAYSIA 2020

Your Data Is Our Future

